Live Mix Pro 32-8

ORDERCODE D2251

SHOWELECTRONICS FOR PROFESSIONALS

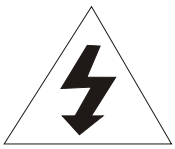
Introduction

Thank you for purchasing a 8 Bus SERIES Mixing Console. The 8 Bus Series provides an excellent balance of operability, functionally and ease of use. In order to take full advantage of the 8 Bus Series capabilities and enjoy years of trouble-free use,please read this Manual carefully.

Unpacking and Installation

Although it neither complicated to install nor difficult to operate your set, a few minutes of your time is required to read this manual for a properly wried installation and becoming familiar with its many features and how to use them.

Please take a great care in unpacking your set and not discard the carton and other packing materials. They may be needed when moving your set and are required if it ever becomes necessary to return your set for service. Never place the unit near radiators , in front of heating vents , to direct sun light, in excessive humid or dusty location to avoid early damage and for your years of quality entertainment . Connect your complementary compoments as illustrated in the following page.



This symbol is intended to alert the user to the presence of uninsulated "dangerous voltge" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

This symbol is intended to alert the user to the presence of important operation and maintenance(servicing) instructions in the literature accompanying the appliance.

CAUTION

RISK OF ELECTRIC SHOCK.
DO NOT OPEN

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK
DO NOT REMOVE COVER (OR BACK)
NO USER-SERVICEABLE PARTS INSIDE
REFER SERVICING TO QUALIFIED SERVICE PERSONNEL

Caution:

To prevent electric shock do not use this (polarized) plug with an extension cord,receptacle or other outlet unless the blades can be fully inserted to prevent blade exposure.

WARNING:

TO Prevent fire or shock hazard.do not expose the unit to rain or moisture.

ATTENTION:

Pour prévenir les chocs électriques ne pas utiliser cette fiche polariseé avec un prolongateur, une prise de lanmes peuvent´etre insérées`a fond sans en laisser aucune partiè a´decouvert.

Features

1. 32/40 CHANNELS MONO INPUTS

8 Mixing Console provideds 32,40 channels of mono input that can be mixed down to a Stereo Mix, 8 Groups, 8 Aux sends.

2. 4 CHANNELS STEREO INPUTS

These mixing consoles provides 4 channels of stereo channel input that can be mixed down to a Stereo Mix , 8 Gropus, 8 Aux sends.

3. 8 AUX SENDS, 6 STEREO AUX RETURNS

8 AUX SENDS systems and 6 STEREO AUX RETURN systems are provided.Even when two 1- in/2-out effect devices are connected, two more AUX SEND systems are still available for use.

4. 4 BAND EQ WITH SWEEPABLE HIGH-MID,LOW-MID RANGE BAND

All mono input channels include 4 band equalizer with sweepable high-mid and low-mid range frequency.

5. XLR CONNECTOR AND 1/4″TRS CONNECTOR

XLR type connectors are provided for MIC jacks and 1/4″ TRS connectors are provided for the LINE and TAPE IN jacks.

6. 8 GROUP MIXING BUSES

8 Group mixing buses, each with its own Master Fader,ON/OFF Switch to Stereo Mix Buses.

7. TAPE INPUT

You can connect the outputs of your multi-track recorder.

8. INPUT CH INSERT I/O JACK and DIRECT OUT JACK

INPUT CH INSTER I/O jack and DIRECT OUT jack are provided on each channel , allowing you to connect effect devices independently for each channel.

9. MASTER INSTER I/O

INSTER I/O connector are provided on GROUP OUTPUT 1~8,STEREO MIX OUT and MONO OUTPUT, allowing you to connect sub mixer or other sound device independently for each output.

10. SOLO SWITCH

It is handy for spot-checking the presence and quality of individual inputs while setting up,recording and mixing. SOLO does not interrupt the eight main Master ,the L/R Mix OUT or AUX sends,and can be used at any time without affecting the recording process.

11. 10 DOT LED DISPLAY

10-DOT LED Meter illuminated for precise visidual level monitoring.
2 point input level indicators on all input channel.
Especially status of Main Mix L/R Master be showed by analog VU Meter.

12. 100mm FADER
For easy set up and input,group master fader is used by Smooth and noise reduction 100-mm faders.

13. DC 12V LAMP CONNECTOR
A BNC type LAMP connector is provided on the right hand side of the mixing console panel, allowing you to operate the mixer conveniently under dark condition.

14. External Power Supply
This system is used by high capaciry,high performance external power supply with current limiter.

Precautions

1. A VOID EXCESSIVE HEAT ,HUMIDITY,DUST AND VIBRATION
Keep the unit away from locations where it is likely to be exposed to high temperatures or humidity-such as near radiators,stoves,etc.Also avoid location which are subject to excessive dust accumulation or vibration which could cause mechanical damage.

2. AVOID PHYSICAL SHOCKS
Strong physical shocks to the unit can cause damage,Handle it with care.

3. D0 NOT OPEN THE CASE OR ATTEMPT REPAIRS OR MODIFICATIONS YOURSELF
This product contains no user-serviceable parts.Refer all maintenance to qualified service personnel.
Opening the case and/or tampering with internal circuitry voids the warranty.

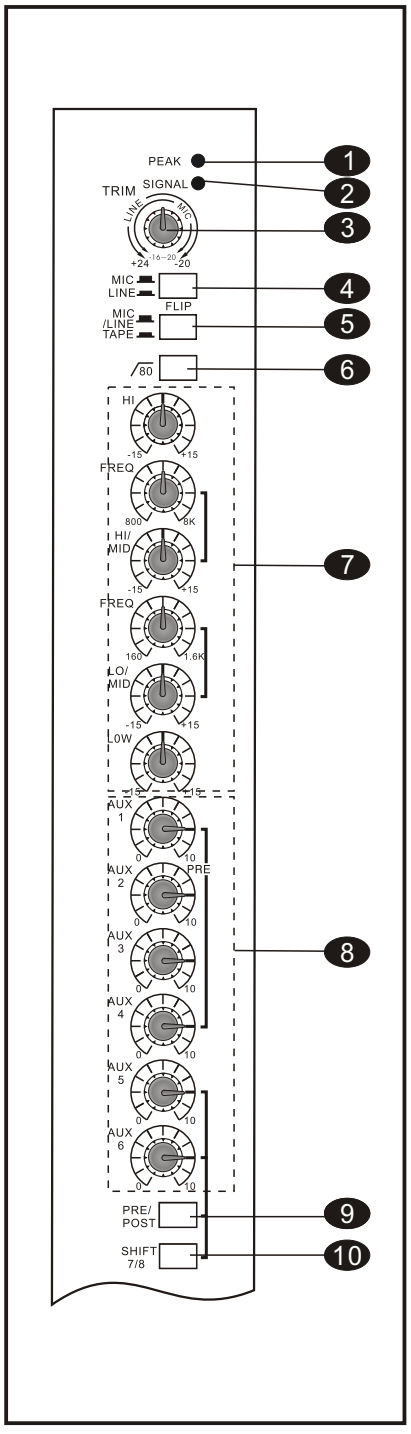
4. ALWAYS POWER OFF BEFORE MAKING CONNECTIONS
Always turn the power OFF before connecting or disconnecting cables . This is important to prevent damage to the unit itself as well as other connected equipment.

5. HANDLE CABLES CAREFULLY
Always plug and unplug cables-including the AC power cord-by gripping the connector,not the cord.

6. CLEAN WITH A SOFT DRY CLOTH
Never use solvents such as benzine or thinner to clean the unit. Wipe clean with a soft,dry cloth.

Front Panel Controls

1. MONO INPUT SECTION



1. PEAK INDICATOR

This indicator detects peak level after the EQ.It will light red at 3dB before clipping to warn that clipping level has nearly been reached. Peak indicator is not going through MIX B Section.

2. SIGNAL INDICATOR

This indicator detects signal level after the EQ. It will light green at - 10dB.
Signal indication is not going through MIX B Section.

3. TRIM CONTROL

According to the level of the input signal,use this knob to adjust the input to an appropriate level.
The best balance of S/N and dynamic range will be achieved if you adjust the TRIM control so that the 1 peak indicator lights occasionally.

4. MIC/LINE INPUT SELECTOR

This switch selects the input connector for the channel.
When MIC/LINE (▟) is selected, the input signal will be taken Mic connector (Balanced XLR type).
When TAPE (▁▟) is selected , the input signal will be taken LINE connector (Balanced phone jack).

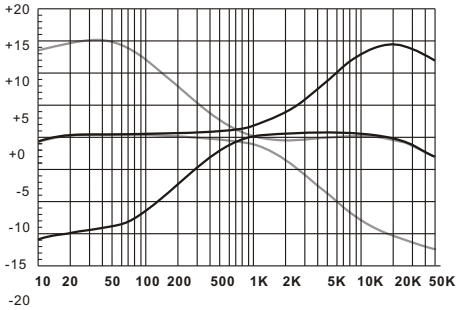
5. MIC/LINE OR TAPE INPUT SELECTOR (FLIP SWITCH)

This switch selects the input connector for the channel.
When MIC/LINE (▟) is selected, the input signal will be taken MIC/LINE connector(Balanced XLR type).
When TAPE (▁▟) is selected , the input signal will be taken TAPE connector(Balanced phone jack).

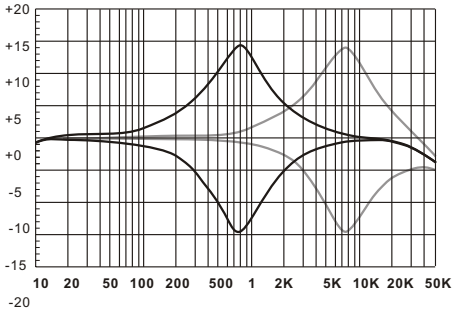
6. HIGH-PASS FILTER SWITCH

This switch turns on/off a high-pass filter that cuts the signal below 80Hz at 18dB/ octave. By using the high-pass filter, you can reduce or get rid of minimizing room rumble , mic pop-ping noise, traffic noise ,wind noise and other unwanted low-frequency noises.

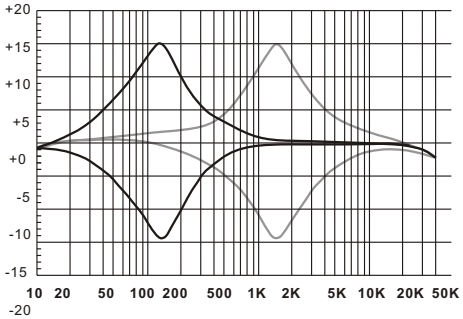
1)HIGH:12KHz±15dB shelving type
LOW:80Hz, ±15dB shelving type



2)HI-MID:800Hz-8KHz(variable)
±15dB peaking type



3)LOW-MID:160Hz-1.6KHz
(variable), ±15dB peaking type



7. 4BAND EQ CONTROLS(HIGH, HI-MID , LOW-MID, LOW)

This is a 4 - band equalizer with center frequencies, range, and type as shown below. The frequency response is flat when the knob is in the center position.

8. AUX 1~8 CONTROLS

This knobs control the level of the signals sent to AUX buses.
- The AUX 1 ~ AUX 4 controls are pre-fader, and the signal levels sent to the AUX 1~AUX 4 buses will be unaffected by the channel fader setting .

- The AUX 5 / AUX 7 and AUX 6 / AUX 8 controls will be affected by the POST/PRE SELECT SWITCH and SHIFT 7/8 SIGNAL SELECT SWITCH setting.

9. AUX 5~8 POST/PRE SELECT SWITCH

- POST(▟ ,RELEASAED SWITCH):

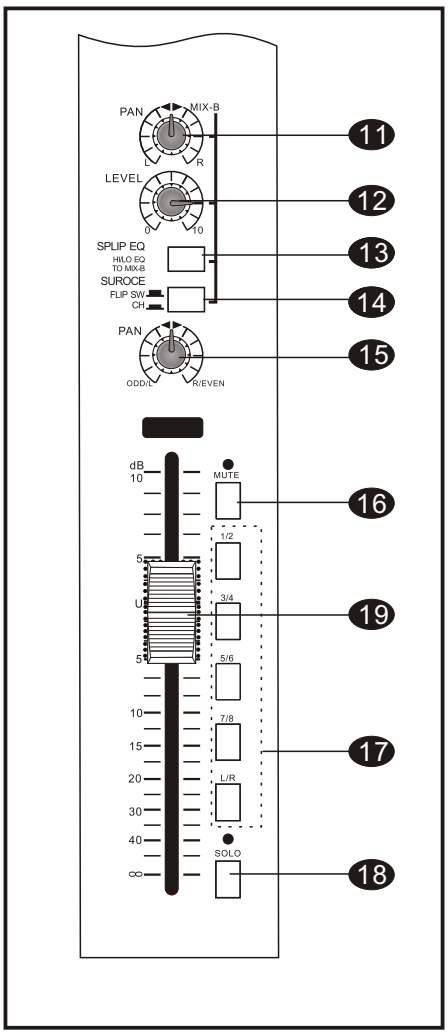
Selects the post-fader signal from the point in the channel after the MUTE OFF switch. Because the signal feeding this position will be subject to any adjustments to that channels inputs fader, this position is usually preferred for effects or echo mixes.

- Pre(▁▙ ,DEPRESSED SWITCH):

Pre-Fader signal is taken from the stage preceding the fader EQ, so it is not affected by the channel's fader.

10. AUX 5~8 SIGNAL SELECT SWITCH(SHIFT)

This SHIFT 7/8 SWITCH connects the two level controls (as a pair) to either AUX 5 & 6 sends or to AUX 7 & 8 sends.
When this switch turns on, the AUX signal will be shifted from AUX 5/AUX 6 to AUX 7/AUX 8.
In this case ,you can adjust AUX 7 / AUX 8 signal with AUX5/ AUX 6 controls.



11. PAN CONTROL FOR MIX-B

The PAN control routes the channel's MIX-B signal across the left and right MIX-B buses.

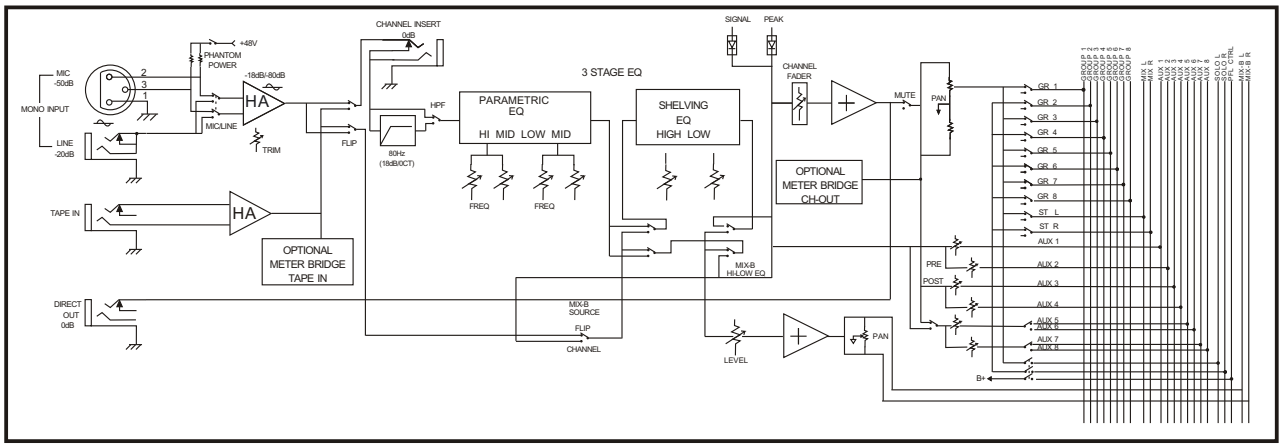
12. LEVEL CONTROL FOR MIX-B

The LEVEL control sets the level of the channel sent to the MIX-B buses. The gain structure of the circuit(like the AUX sent 1-6 circuit) includes extra amplification.

13. SPLIT EQ SELETOR

Each channel strip has a dual signal path with extremely flexible switching . This allows either the mic/line input or tape return inputs to be routed through either the channel fader path or MIX-B with separate EQ and monitoring.The SPLIT switch in the MIX-B section sprits the EQ section of the channel when depressed . In the up-position, all four sections of EQ remain, if engaged, in the primary channel signal path feeding the channel fader and the 8-plus 2 buses. In this mode there is no equalization in the MIX-B path.

When SPLIT switch is depressed, the HI and LO shelving sections of the EQ are removed from the channel signal and inserted into the MIX-B signal path ,The HI-MID and LO-MID parametric sections of the EQ remain ,if engaged, in the channel signal path. The SPLIT function allows you to EQ the channel's signal and its MIX-B signal separated.



14. SOURCE SWITCH

When the MIX-B SOURCE switch is up,MIX-B receives its input from the FLIP switch 5 .Remember,the FLIP switch alternates MIC/LINE or TAPE to channel strip and to MIX-B.

- With TAPE as an input (SOURCE up to select the FLIP switch and MIC/LINE or TAPE switch in the up position),the MIX-B section functions as a tape monitor sub-mix, allowing you to listen to the inputs and outputs of your multi-track record as you record.This is the most common use of the MIX-B section, during tracking and overdubbing.
- With MIX/LINE as an input (SOURCE up to select the FLIP switch, and MIX/LINE or TAPE switch in the down position), MIX-B becomes an additional input to add tracks or effects during a mix-down.
- With CHANNEL as an input (SOURCE down in CHANNEL position),MIX-B taps its signal from the channel fader.

15. PAN CONTROL

This control adjusts the stereo position of the signal between the stereo L/R buses,and also between odd and even pairs of Buses 1 through 8.

This control allows you to place the channel's input signal within the stereo image by assigning more or less of the signal to the left or right sub-master controls.

Turning the Pan control to the left (odd/L)of center moves the apparent source toward the left channel and Group 1,3,5,7 buses, turning it to the right moves the source toward the right channel and Group 2,4,6,8 buses.

16. CHANNE MUTE SWITCH

When this switch is off, the signal of each channel will be the MAIN MIX L/R buses ,the Group 1 ~ 8 buses and AUX 1 ~ 8 buses.

When this switch is on , the output signal to each bus muted completely. This switch should be turned on for unused channels.The channel's mute switch does not affect the channel's insert output or direct output.

17. BUS ASSIGH SWITCH

When these switchs are engaged, the channel's input signal can be routed to the 8 group busses.

In conjunction with selecting the group routing, the position of the channel's pan control determines if a signal is routed to Group 1 or 2, 3 or 4, 5 or 6, Group 7 or 8 and/or Mix L or If the pan control is panned left, it will be routed Group 1,3,5,7 and / or Mix L ; if the pan control is panned right, the signal will appear at Group 2, 4, 6,8 and/or Mix R.

18. CHANNEL FADER

The 100-mm audio taper fader controls the output level of channel that is fed to Mix master and Sub Group master.

The channel fader should optimally be set near the"o"level when all other controls are set to their normal settings.

19. SOLO SWITCH

The channel SOLO switch assigns the output of channel PAN control to the stereo solo buses . SOLO does not interrupt ,the eight sub-master , the L/R Mix OUT or AUX sends, and can be used at any time without affecting the recording process.

SOLO is handy for spot-checking the presence and quality of individual input while setting up , recording and mixing. The channel SOLO function is normally post fader/post mute.

※ Modification

These modifiction instructions are for use by qualitied personal only.

- AUX Send 1 ~ 4 modifiction

This modifiction changes the option point of all "pre"AUX sends from pre-EQ to post-EQ.

It must be done on each channel.For example,if you have a 24 channel modifiction must be done on all 24 input channel.See below figure.

1) Remove power cable

2) Remove jumper at J75/PRE & J87/PRE

3) Add a jumper at J80/POST & J83/POST

4) Repeat for of all input channels

- MIX-B modification

This modifiction changes the option point of the MIX-B from pre-EQ to post-EQ.

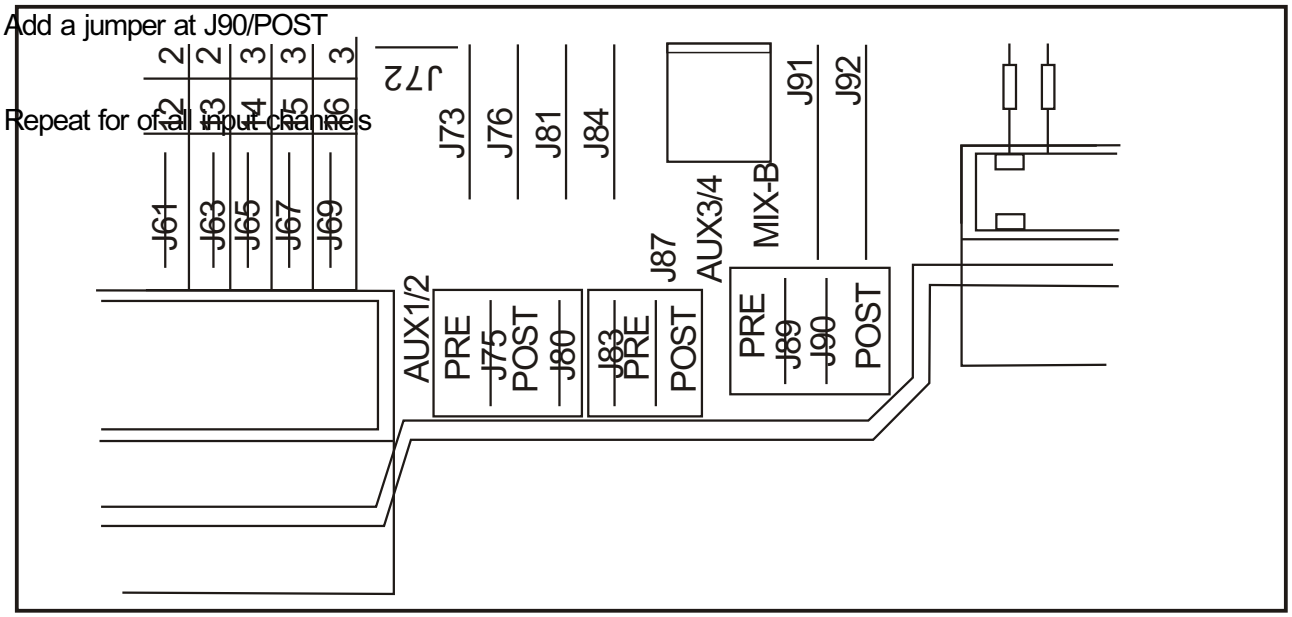
It must be done on each channel.For example, if you have a 24 channel modifiction must be done on all 24 input channel.See below figure.

1) Remove power cable

2) Remove jumper at J89/PRE

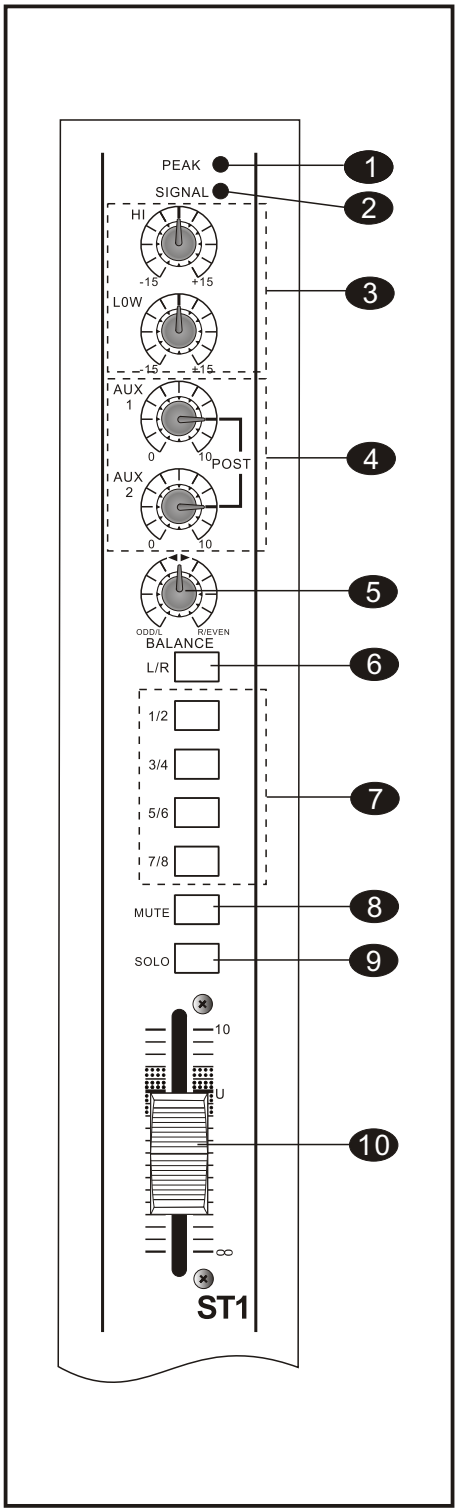
3) Add a jumper at J90/POST

4) Repeat for of all input channels



Mono Input PC Board Drawing

2. STEREO INPUT SECTION



1. PEAK INDICATOR

This indicator detects peak level after EQ.It will light red at 3dB before clipping to warn that clipping level has nearly been reached.

2. SIGNAL INDICATOR

This indictor detects signal level after the EQ . It will light green at -10dB.

3. EQ CONTROLS(HIGH,LOW)

This is a 2-band frequency fixed equalizer with center frequencies range and type as shown below.

HIGH: 12Hz,±15dB shelving type

LOW: 80Hz,±15dB shelving type

4. AUX SEND CONTROLS

This knobs controls the level of the signals sent to Aux buses.

- The AUX 1&2 controls the STEREO channel 1 &3 PANEL are pre-fader and the signal levels sent to the AUX 1 & 2 buses will be unaffected by the channel fader setting.

- The AUX 3&4 controls on the STEREO 2&4 PANEL are post-fader and the signal levels sent to the AUX 3&4 buses will beaffected by the channel fader setting.

5. BALANCE CONTROL

This control adjusts the balance or the L/R position of the stereo input signal.

Turning the BALANCE control to left of center moves the apparent source toward the MAIN MIX L and Group 1, 3, 5, 7 buses, turning it to the right move the source toward the MAIN MIX R and Group 2,4,6,8 buses.

6. L/R (STEREO) SWITCH

When these switches are on, the signal of each channel will be sent to the MAIN MIX L/R buses. When this switch is of, the output signal to MAIN MIX L/R buses will be muted.

7. GROUP SELECTOR (GROUP BUS ASSIGH SWITCH)

When these switch are on , the signal of each channel will be sent to the 8 GEROUP buses. These switches is arranged in two columns.

Odd numbered Left(Group 1, 3, 5, 7) and even numbered, Right(Group 2, 4, 6, 8) indicating which "side" of the BALANCE control they will be assigned to.

8. CHANNEL MUTE SWITCH

When this switch is engaged, (depressed position) the signal of each stereo channel will be muted in the MAIN MIX L/R buses, the Group1-8 buses and AUX 3-4 buses.

The channel MUTE switch does not affect the pre-position of the AUX 1 & 2 signal on the STEREO PANEL, but, it does affect the post-position of the AUX 3 & 4 signal on the STEREO 2,4 PANEL.

9.CHANNEL SOLO SWITCH

The channel SOLO switch assigns the output of the channel PAN control to the stereo solo buses.

10.CHANNEL FADER

This fader controls the output level of the input channel signal, determining the volume balance between channels. The channel fader should be lowered for unused channels.

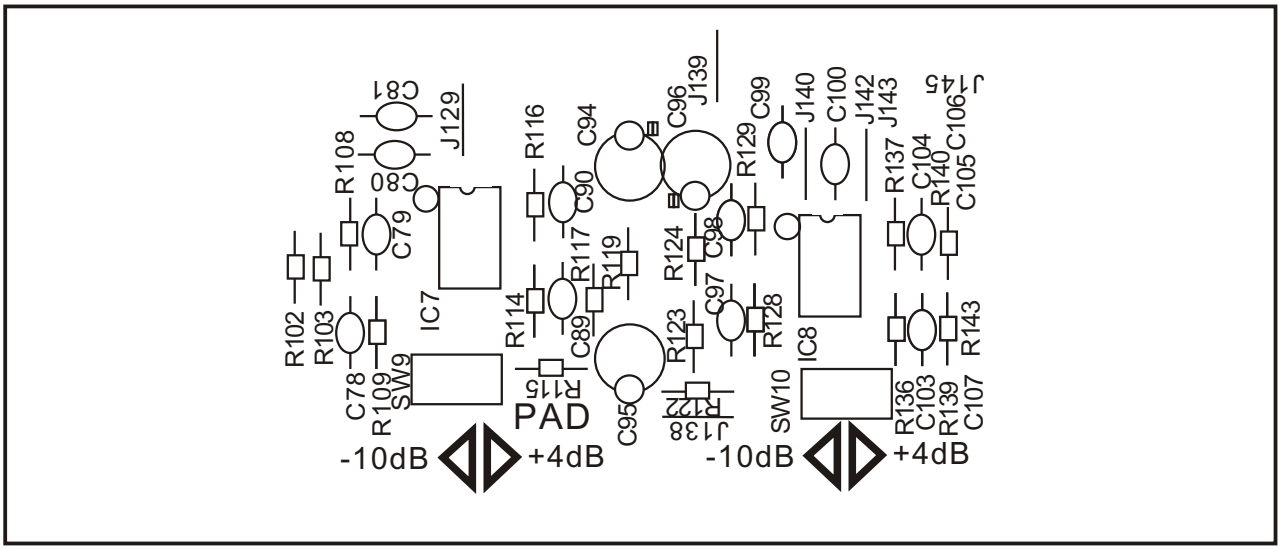
※ PAD SWITCH(STEREO INPUT SENSITIVITY SELECT)

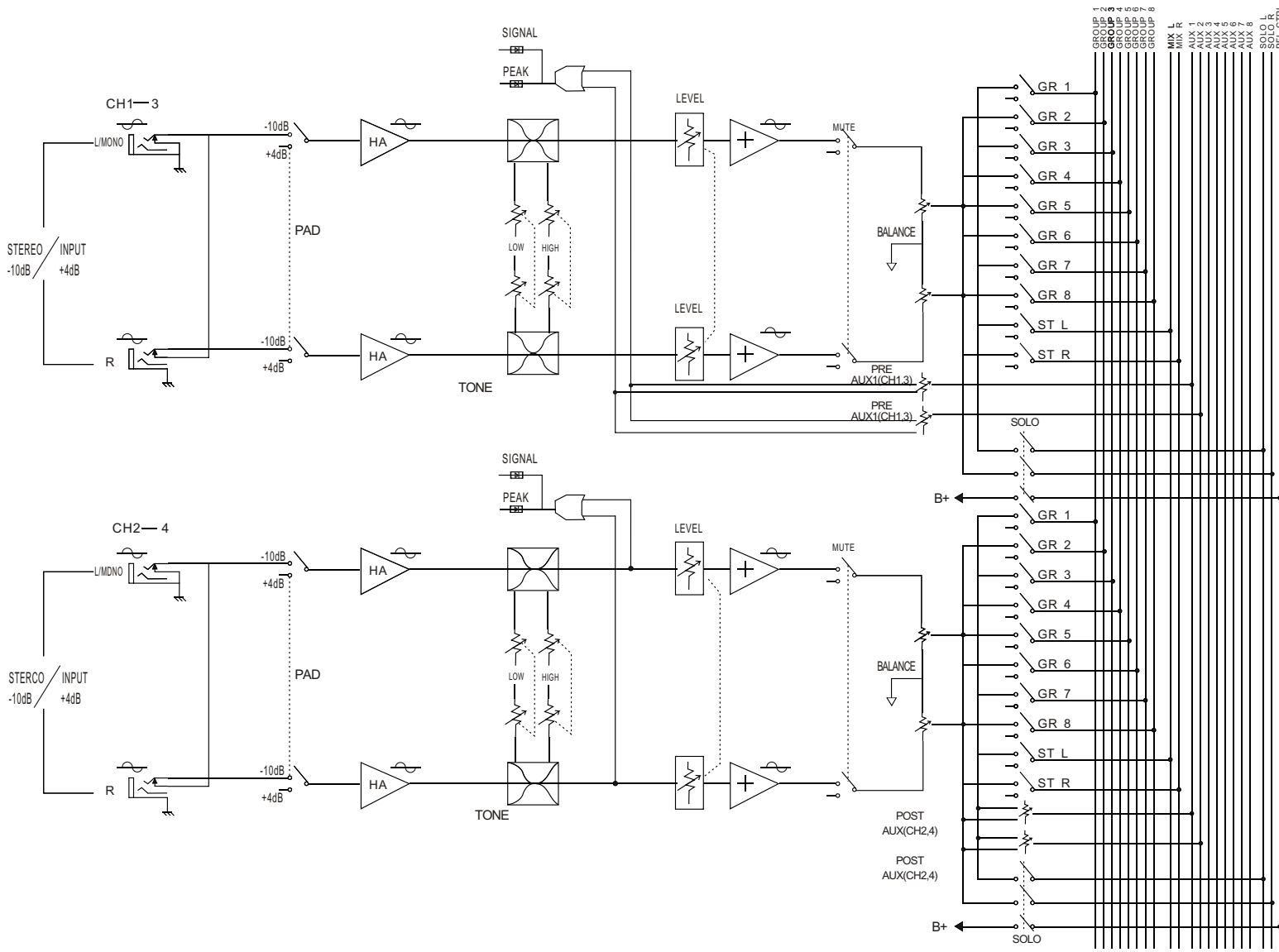
If you select STEREO INPUT SENSITIVITY to either-10dB or +4dB.

Look at the STEREO INPUT PC Board. The PAD SWITCH is setted 10dB position initially on STEREO INPUT PC Board.

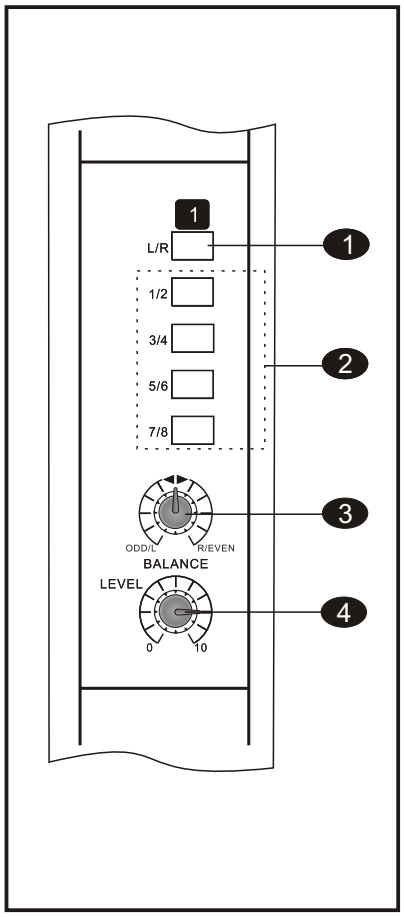
This switch selects the appropriate gain for the input signal level.

The sensitivity is -10dB when the switch is slided toward left hand side, and + 4dB when it is slided toward right hand side.




CH1—3
L/MONO
R
STEREO / INPUT
-10dB / +4dB
-10dB
+4dB
PAD
HA
SIGNAL
PEAK
LOW
HIGH
TONE
LEVEL
MUTE
BALANCE
PRE AUX1(CH1,3)
SOLO
B+
GR 1
GR 2
GR 3
GR 4
GR 5
GR 6
GR 7
GR 8
ST L
ST R
CH2—4
L/MONO
R
STERCO / INPUT
POST AUX(CH2,4)
GROUP 1
GROUP 2
GROUP 3
GROUP 4
GROUP 5
GROUP 6
GROUP 7
GROUP 8
MIX L
MIX R
AUX 1
AUX 2
AUX 3
AUX 4
AUX 5
AUX 6
AUX 7
AUX 8
SOLO L
SOLO R

3. AUX RETURN SECTION



1. L/R (STEREO) SWITCH

When this switch is on ,the signal of each AUX RETURN will be sent to the MIX L/R buses. When this switch is off, the output signal to MIX L/R buses will be muted.

2. GROUP SELECTOR (GROUP BUS ASSIGN SWITCH)

When these switches are on , the signal of each AUX RETURN will be sent to the 8 GROUP buses.

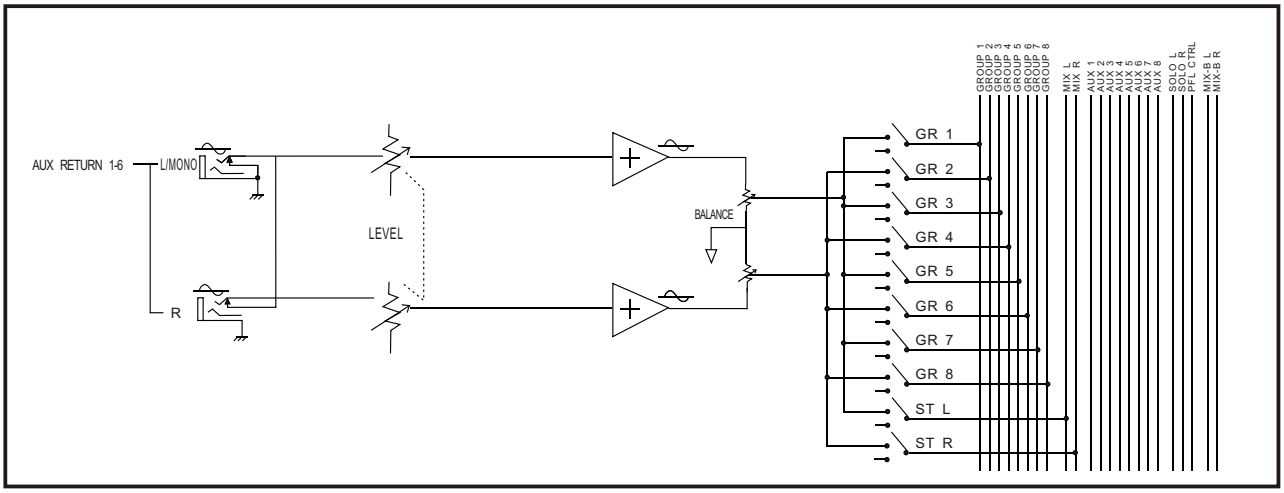
3. BALANCE CONTROL

This control directs the signal coming from the AUX RETURN level control into the left and/or right channels. Turning the BALANCE control to the left of center moves the apparent source toward the left channel. Turning it to the right moves the source toward the right channel. Centering the control makes the apparent source appear to be centered between the channels.

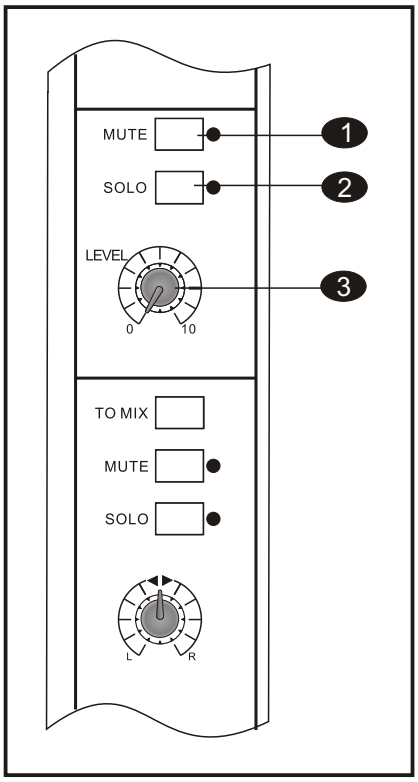
4. LEVEL CONTROL

This control adjusts the input levels from the effect units etc. Connected to the L/MONO, R jacks of AUX RETURN 1~ 6 are sent to the MIX L/R buses,and 8 Group buses.

If a plug is inserted into only the L/MONO jack, the same signal will be sent to L/R BALANCE control.



4. AUX SEND SECTION



1. MUTE SWITCH

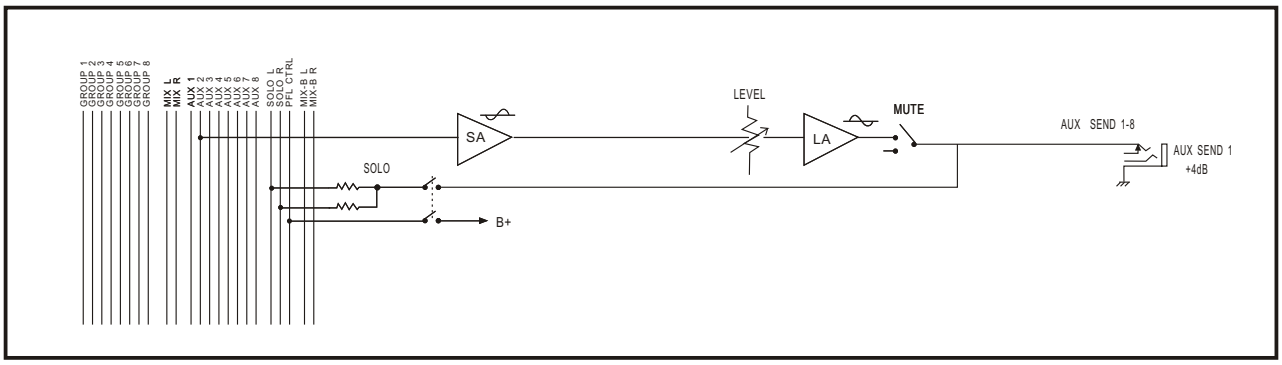
When this switch is engaged, the signal from each respective AUX SEND will be muted to the corresponding AUX sent connector.

2. SOLO SWTCH

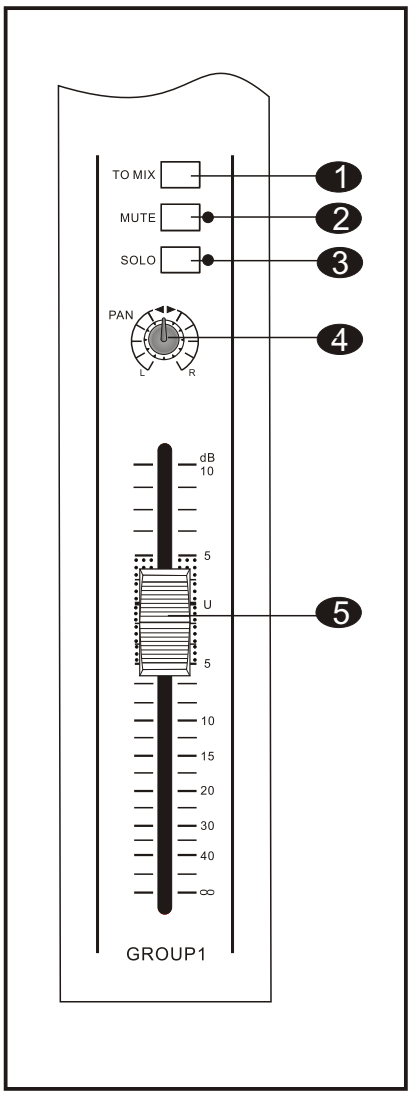
when you wish to monitor the output signals being sent to AUX SEND 1~6 , press the appropriate switch.

3. LEVEL CONTROL

The AUX SEND master adjusts the overall mix level on each respective AUX buses . The signal sent is the summed total of the individual sends on each input channel routed to a particular AUX SEND.



5. GROUP SECTION



1. TO MIX SWITCH

When this switch is on, the signal of each GROUP will be sent to the STEREO MIX L/R buses.

2. MUTE SWITCH

When this switch is on, the signal of each Group will not be sent to the Group connectors.

3. SOLO SWITCH

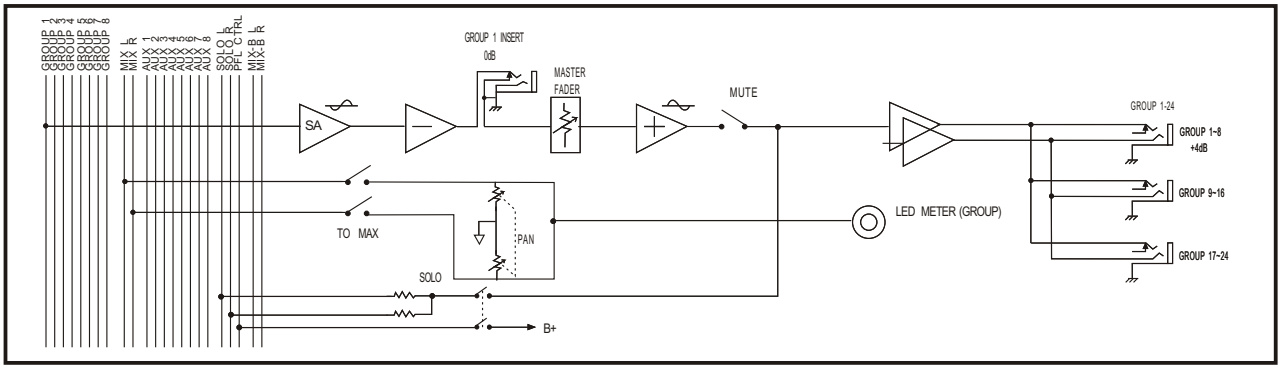
Pressing this switch will allow you to monitor the output signals being sent to Group 1~8, press the appropriate switch.

4. PAN CONTROL

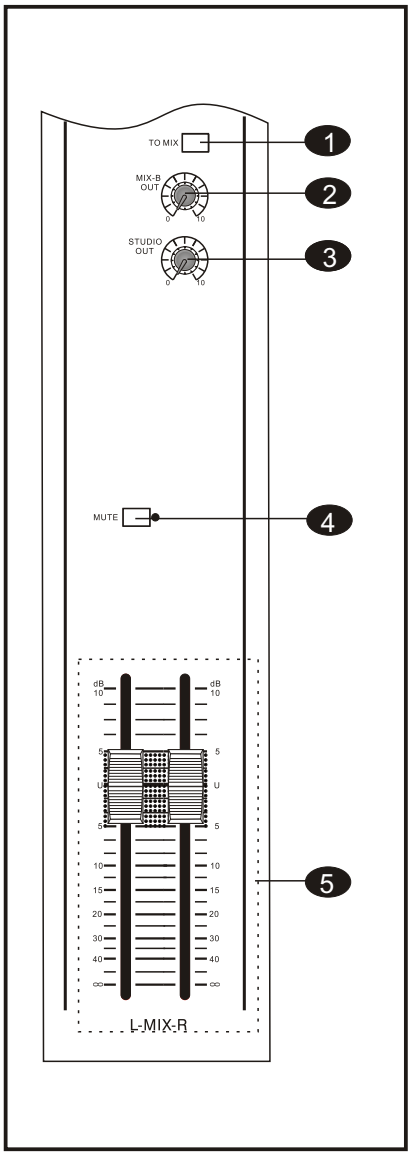
This control adjusts the panning of the GROUP signal sent to the STEREO MIX L/R buses.

5. LEVEL CONTROL

This fader adjust the final level of the combined signals from all combined signals from all channels and send them to the GROUP output jacks.
The GROUP 1~8 level meters allow you to monitor the GROUP outputs.



6. MASTER SECTION



1. TO MIX SWITCH

When this switch is on , the signal of MIX-B will be sent to the STEREO MIX L/R buses.

2. MIX-B CONTROL

This control adjust the MIX-B final level of the combined signals from all channels and send them to the MIX-B output jacks.

3. STUDIO OUT CONTROL

This is a stereo level control for the studio.
This circuit monitors the left/right SOLO buses.

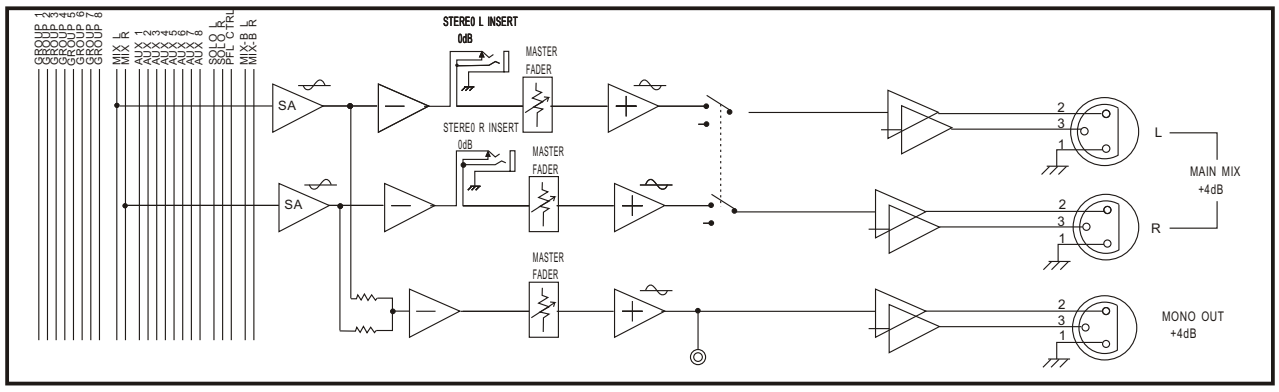
4. MIX L/R MUTE SWITCH

When this switch is off, the signal of MIX L/R will be sent to the MIX L/R connectors. When this switch is on , the MIX L/R output signal to MIX L/R connectors will be muted.

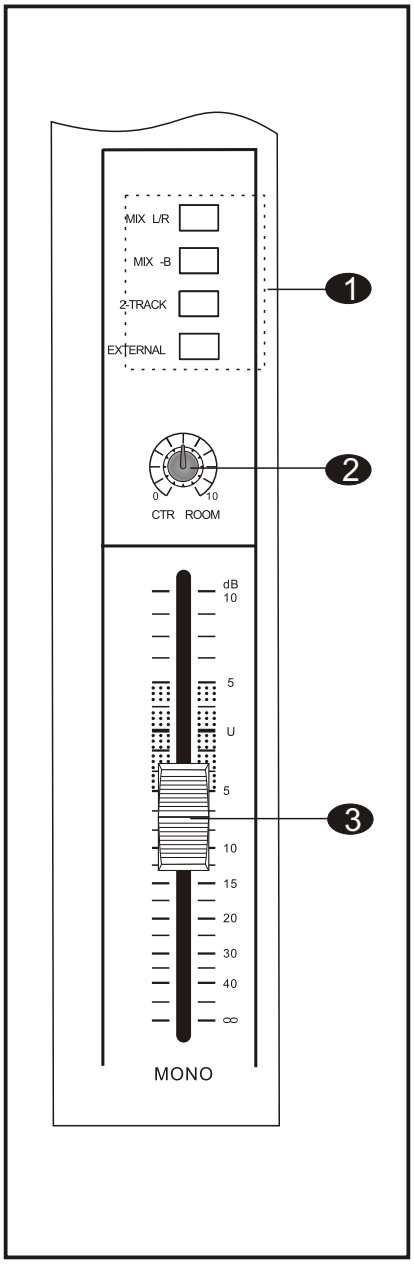
5. MIX L/R MASTER FADER

These 100-mm faders adjust the final level of the combined signals from all channels and send them to the MIX L/R output jacks. The MIX L/R level meters allow you to monitor the MIX L/R outputs.

Rated output(Nominal) level is achieved with the fader set at“0”on the scale.



7. CONTROL ROOM and MONO SECTION



1. SOURCE SELECTOR SWITCH

The control room monitors and the studio playback monitors are both controlled from this console. A bank of switches selects the stereo sources available to the speakers from L/R MIX , MIX-B, 2-TRACK and EXTERNAL. You can select any combination of signal source.

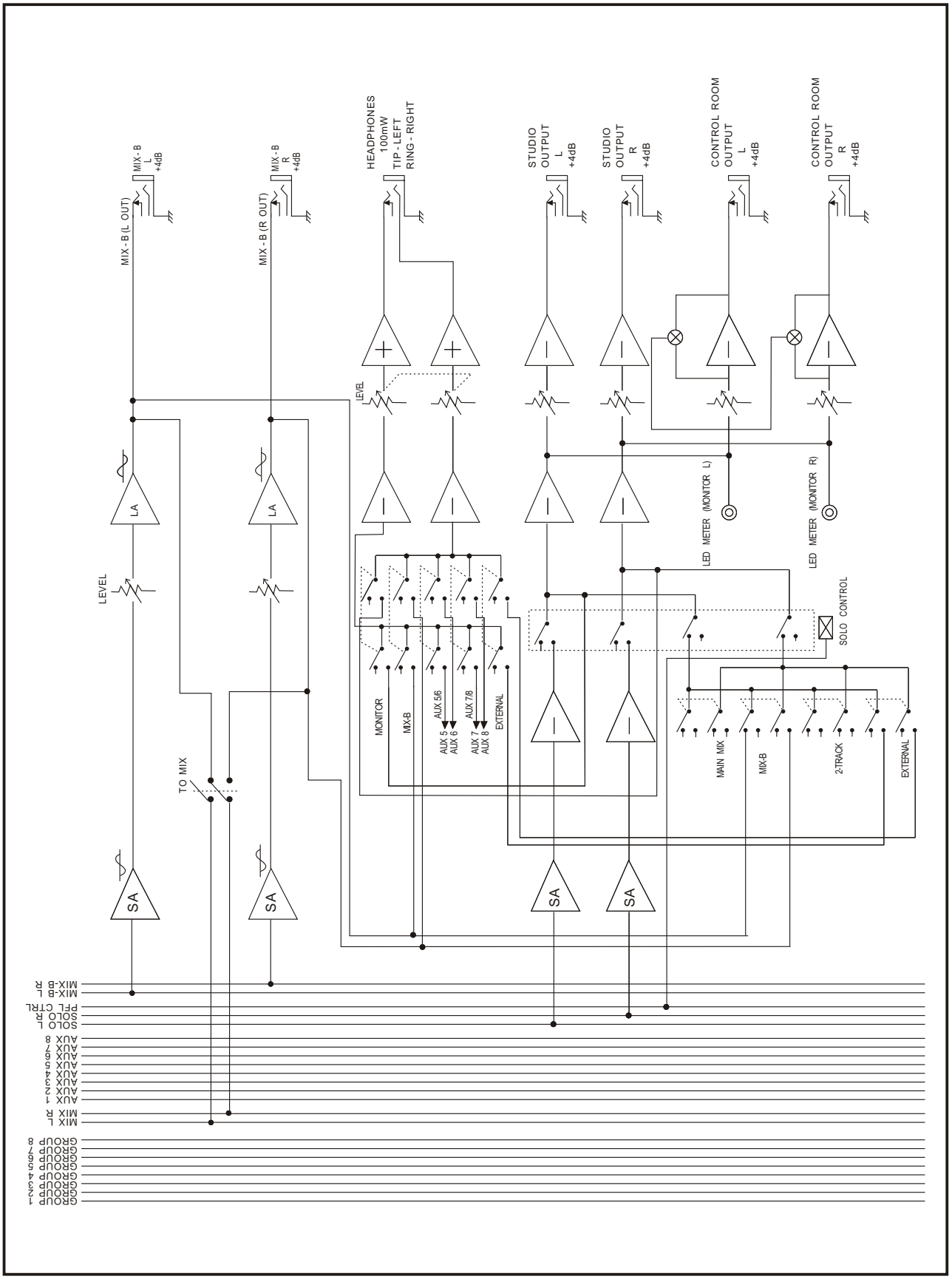
2. CONTROL ROOM CONTROL

This is a stereo level control for the studio monitor.
This circuit monitors the left/right SOLO buses.

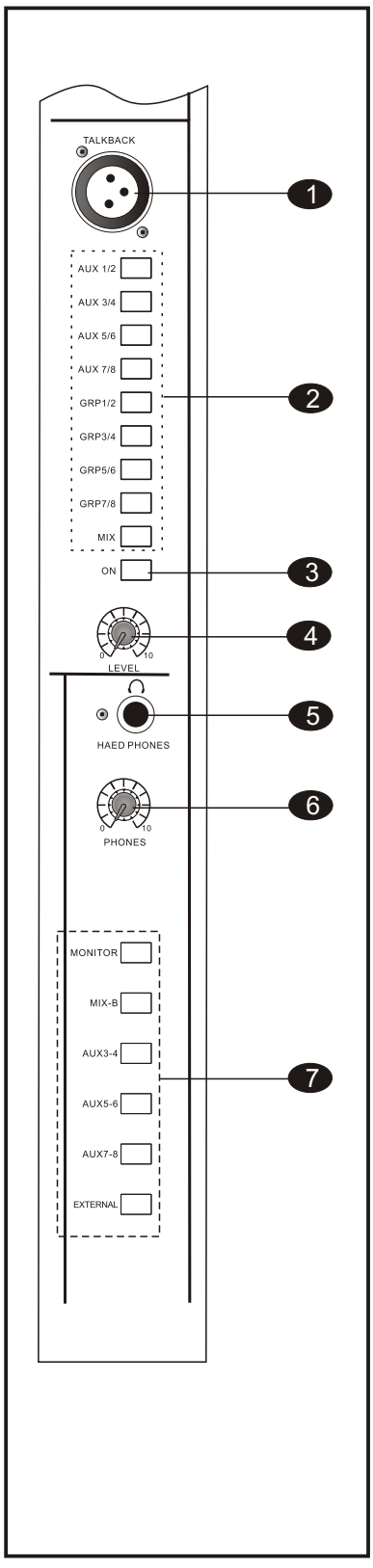
3. MONO FADER

This 100-mm faders adjust the final level of the combined signals from solo buses, and send them to the MONO output jacks .

Rated output (Nominal) level is achieved with the fader set at “0” on the scale.


MIX-B (L OUT)
MIX-B (R OUT)
MIX-B L +4dB
MIX-B R +4dB
HEADPHONES 100mW TIP-LEFT RING-RIGHT
STUDIO OUTPUT L +4dB
STUDIO OUTPUT R +4dB
CONTROL ROOM OUTPUT L +4dB
CONTROL ROOM OUTPUT R +4dB
LEVEL
LA
SA
TO MIX
MONITOR
MIX-B
AUX 5/6
AUX 7/8
EXTERNAL
LED METER (MONITOR L)
LED METER (MONITOR R)
SOLO CONTROL
MAIN MIX
MIX-B
2-TRACK
EXTERNAL
MIX-B L
MIX-B R
PFL CTRL
SOLO L
SOLO R
AUX 1
AUX 2
AUX 3
AUX 4
AUX 5
AUX 6
AUX 7
AUX 8
MIX L
MIX R
GROUP 1
GROUP 2
GROUP 3
GROUP 4
GROUP 5
GROUP 6
GROUP 7
GROUP 8

8. TALKBACK/HEADPHONE SECTION



1. TALKBACK MICROPHONE INPUT CONNECTOR

This input connector is used to input microphone signals for announcements from the mixer operator. The nominal input signal level is -50dB and is designed for dynamic microphones. Please note that this input has no phantom power connection and will not operate condenser microphones that require it.

2. ASSIGN SWITCHES (AUX 1~8,GROUP 1~8,MIX)

These switches select the buses routing of the signal from the talkback microphone .

These switches will stay engaged once the buttons are pushed , so it is necessary to disengage them if a different signal routing is required.

3. ON/OFF SWITCH

When this switch is on, the signal of the TALKBACK will be sent to AUX 1~8,GROUP 1~8,and the MIX L/R buses.

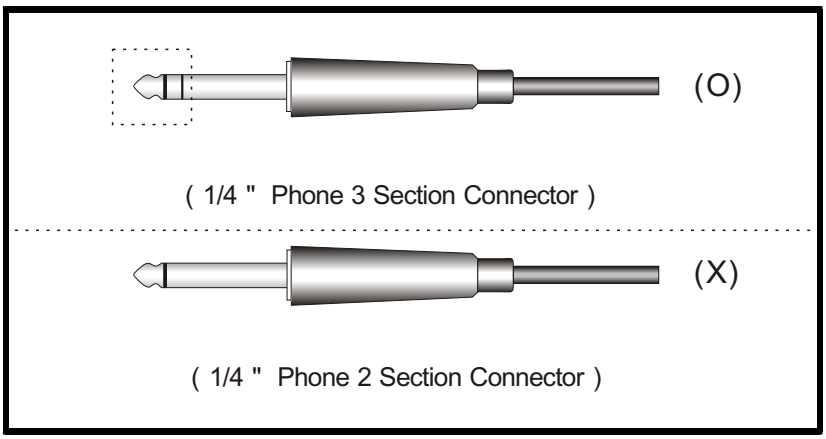
4. LEVEL CONTROL

This control adjusts the signal level of the TALKBACK input.

5. HEADPHONES OUTPUT JACK (1/4″TRS STEREO JACK)

These jacks (tip=left , ring=right , sleeve=GND) may be connected to external power amplifiers for headphone distribution , or you can plug our phones directly into the jack. Use only stereo headphones!

When a mono connector is plugged into the stereo connects both sides of the headphone amplifier to a single load. In any professional audio system , accidents can happen and any will have built in protection circuits to assure that momentary problems will not cause failure. However, this circuit will fail in 2-3 minutes if this caution is not observed.



6. PHONES GAIN

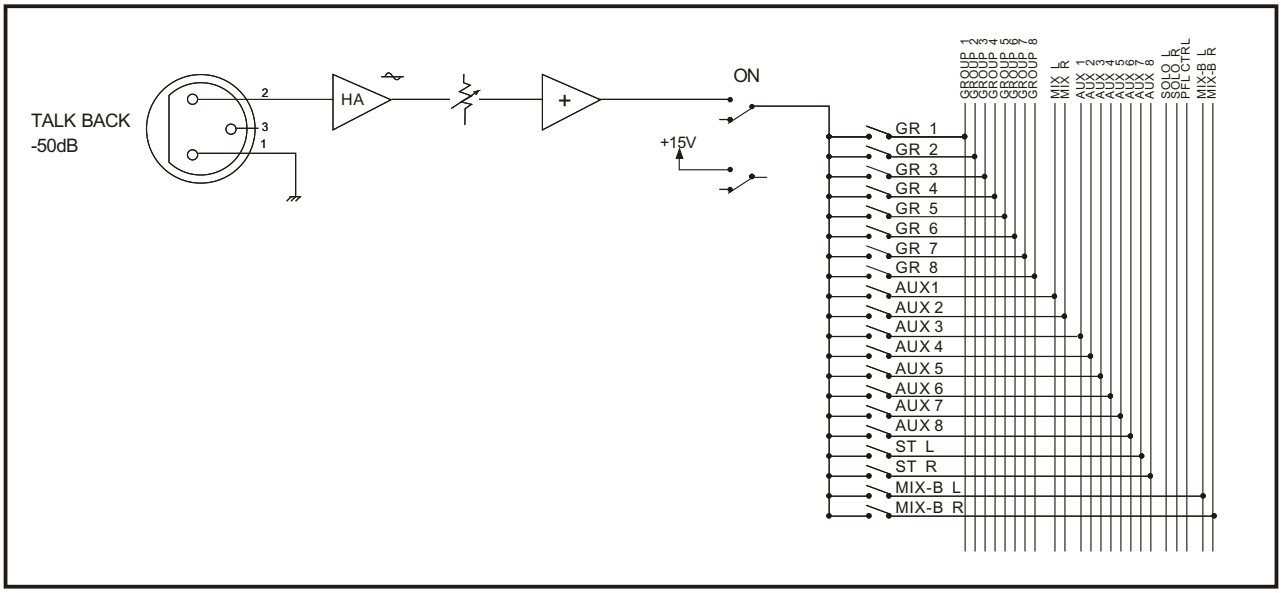
The PHONE GAIN control sets the level at the HEADPHONE jack.

7. HEADPHONE MONITOR SELETOR

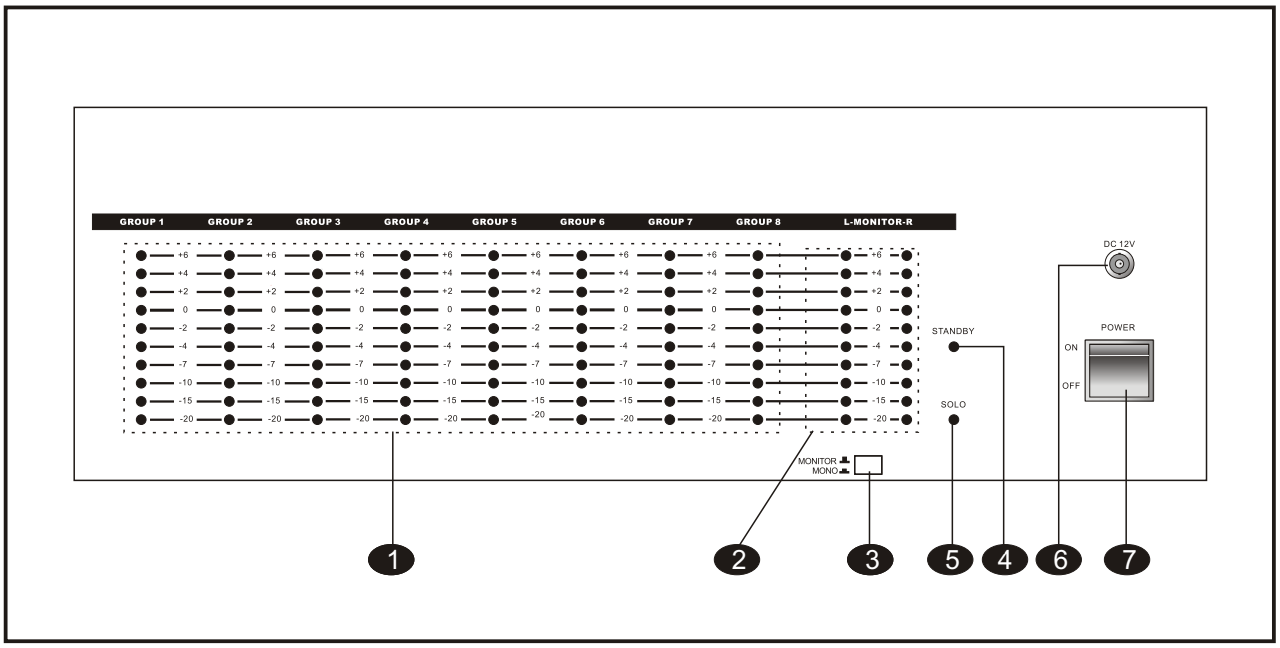
This contains a stereo level control for the headphones outputs ,a stereo SOLO switch, six push buttons to select from the following signal source: MONITOR, MIX-B, AUX SENDS 3 & 4, AUX SENDS 5 & 6, AUX SENDS 7 & 8, and EXTERNAL.

You can select any combination of source.

The AUX SENDS 3 & 4, 5 & 6 and AUX SENDS 7 & 8 switches are connected directly from the outputs of their respective circuits.



9. MASTER LED SECTION



1. GROUP OUTPUT LEVEL INDICATOR (8 GROUPS)

A vertical row of ten light-emitting diodes shows the continuous output level of Group output.
For optimum signal-to-noise (s/n) ratio, try to adjust all levels so that program material is usually at or around 0 VU, with occasional but mot steady excursions to the +3,or over the level scale.

2. MONITIOR OUTPUT INDICATOR

A vertical row of ten light-emitting diodes shows the continuous output level of MONITIOR or MONO. Each indicator is calibrated in volume units , such that 0dB corresponds to an output of 1.23 volts , which is +4dBu a standard in the industry.

3. METER SELECT SWITCH

This switch selects whether MONITIOR or MONO will be monitored.

- MONITOR (,RELEASED SWITCH) mode, the LED meter displays the output levels of the CONTROL ROOM output jacks.

- MONO (,DEPRESSED SWITCH) mode ,the LED meter displays the output level of the MONO output jacks.

4. STAND-BY INDICATOR

This indicator lights when the power switch is turned on.

5. SOLO INDICATOR

This indicator lights when the SOLO switch is turned on.

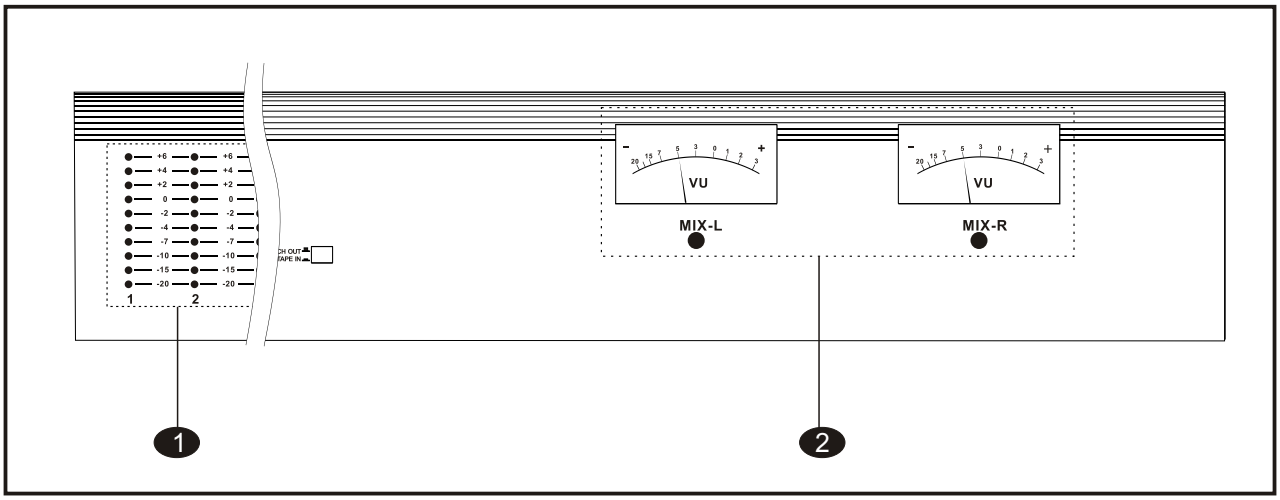
6. LAMP CONNECTOR

A BNC type socket is provided on the right hand side of the mixing Console panel to accommodate a flexible gooseneck lamp, allowing operation of the board under dark conditions. This lamp is available from many professional sound dealers and attaches without tools. The voltage at the socket is 12V DC at a maximum of 250 MA.

7. POWER SWITCH

This switch turns the power ON/OFF .and the power indicator will light in the “ON” position, the power indicator will light.

10. METER BRIDGE



1.CHANNEL NPUT LEVEL INDICATOR

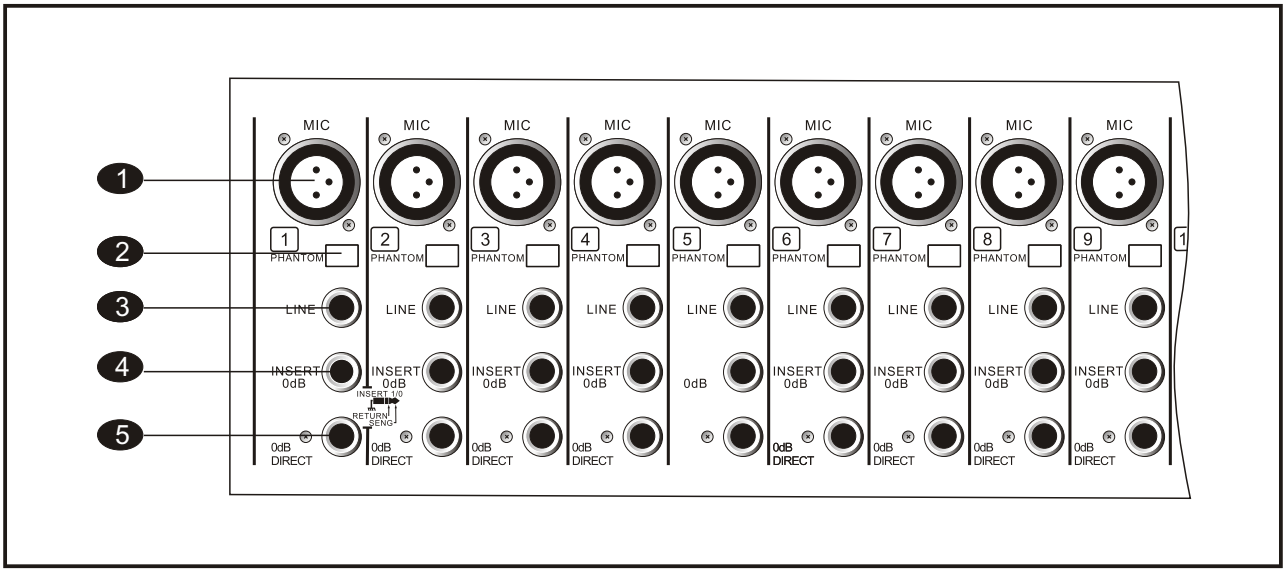
A vertical row of ten light-emitting diodes shows the continuous output level of input channel.
For optimum signal-to-noise ratio ,try to adjust all settings so that program material is usually at or around 0 VU, with occasional but not steady excursions to the +3 , or over the level segments.

2.ANALOG VU METER

This meter gives a convenient visual readout of the MIX OUT signal.

Rear Panel Controls

1. INPUT SECTION CONNECTORS



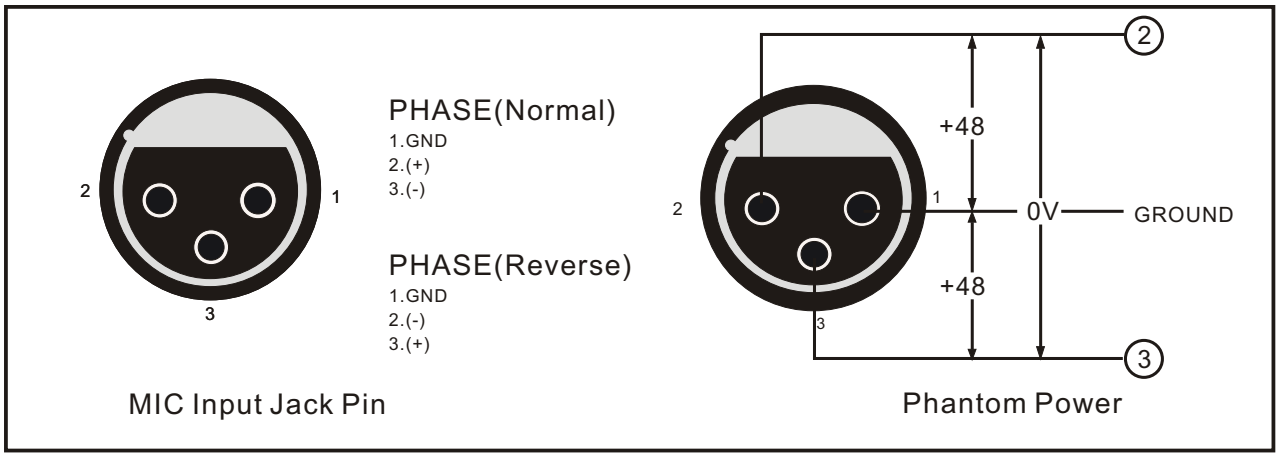
1. BALANCED LOW-Z MIC INPUT CONNECTORS

A 3-pin XLR-type connector is used for balanced low impedance microphone inputs.
(1: sleeve , 2: hot , 3: cold)

Microphones of 50-600Ω line level devices can be connected here.

When the PHANTOM switch is turned on, DC +48V will be supplied to pins 2 and 3 of these connectors.

It is important that , during operation or testing of the mixer, all channel faders remain fully down whenever the MIC input is not properly terminated with a microphone or equivalent 150-ohm source . An open MIC invites the introduction of high noise levels which could produce lower quality sound or an incorrect test measurement.

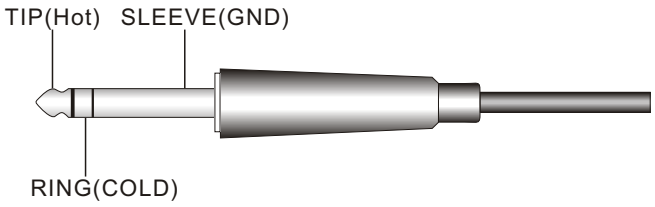


2. PHANTOM POWER SWITCH

When is the “ON”position, 48V DC phantom power will be provided between pin 2 and 3 of the XLR-type jack. if you do not need phantom ,be sure to turn this to the “OFF” position.

3. BALANCED LINE INPUT CONNECTORS

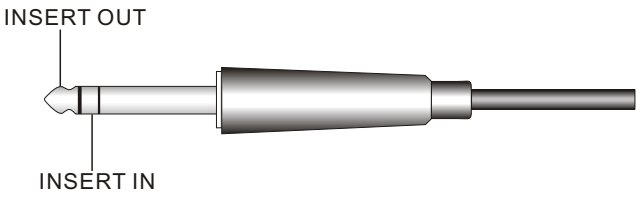
A standard 1/4″phone jack is used for balanced or unbalanced line level signals.
Examples of line level signals include most electronic keyboards ,synthesizers ,turn-tables (with appropriatepre-amps),tape decks and the line outputs from other mixers. All input channel controls, including the variable GAIN control, affect the LINE input Maximum input level before preamp clipping is 12V or +24dB.



(1/4 " Phone 3 Section Connector)

4. INPUT CHANNEL INSERT

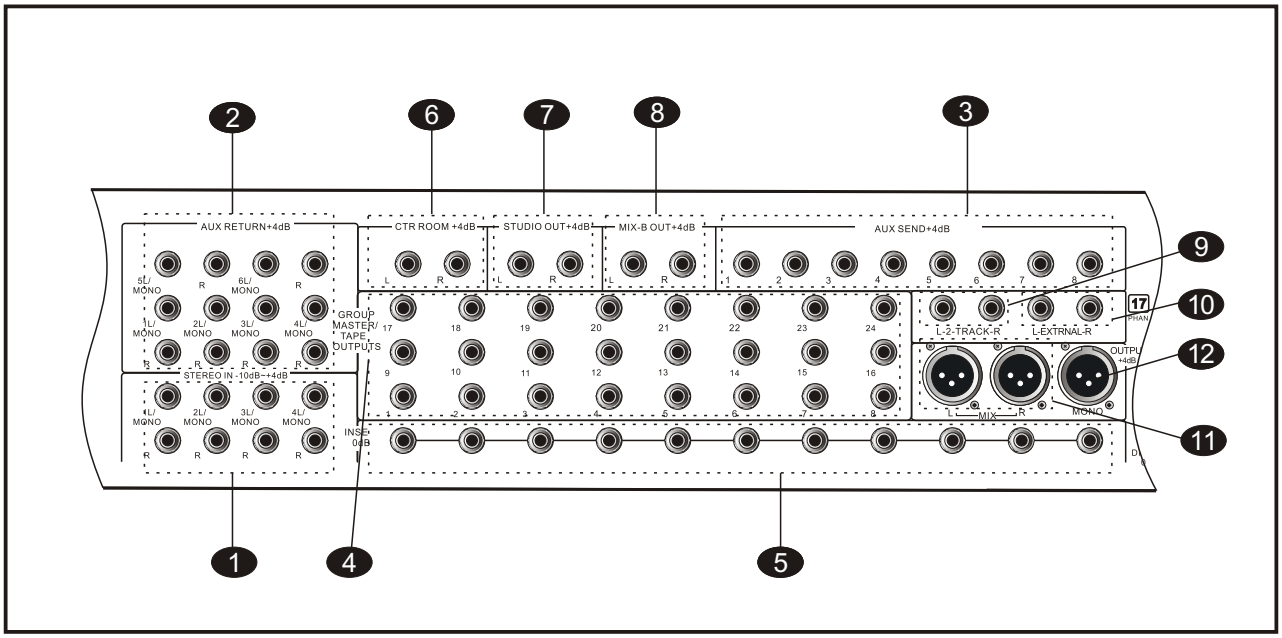
These are input/output jacks located between the head-amplifier and the high pass filter.
The nominal input level and impedance is 0dB/600Ω,and the nominal output level and impedance is 0dB/10kΩ.
These jacks allow you to own graphic equalizers, compressors, noise filters ,or other devices.



5. DIRECT OUT CONNECTORS

These are unbalanced 1/4″ phone jacks which output the post-fader signal independently from each input channel.
The channel strip's output signal is always available at the DIRECT OUT connector.
Using it does not interrupt the normal signal flow through the channel.
Nominal level and Impedance is 0dB/10kΩ.

2. OUTPUT SECTION CONNECTORS



1. 4 STEREO INPUT JACKS

These are unbalanced 1/4″phone jacks which input a stereo source with a nominal input and impedance of +4dB -10dB/600Ω.

If a plug is inserted only in L/MONO, the same signal will be sent to both the L and R buses.

2. 6 AUX RETURN JACKS

These are unbalanced 1/4 ″phone jacks with a nominal level and impedance of +4dB/10kΩ.

These jacks are usually used to receive the audio returned from an effect unit such as reverb or delay, but they can also be used as supplementary inputs.

If a plug is insterted only in L/MONO, the same signal will be sent to both the L and R buses.

These allow you to return signal from outboard devices, either in stereo pairs or mono phonically (many popular effects processors provide a single mono input but have a pair of stereo outputs).

In practice, you'll probably want to use the Auxiliary returns to bring in signal from connected effects processors. If the effects processors have stereo output, they should be connected to both the left and right Auxiliary return inputs so that their stereo integrity is retained . If they have mono outputs, you can route them to either the left or right inputs and then use the Auxiliary return Balance control to adjust the relative level of each paired signal.

3. 8 AUX SEND JACKS

These are unbalanced 1/4″ phone jacks with a nominal output and impedance of +4dB/600Ω.

The AUX SEND output signal is the sum of all of the input channel AUX SENDS.

4. 8 GROUP OUTPUT JACKS

These connectors deliver the main GPOUP output signal to the power amplifiers which will drive the main house speakers in a sound reinforcement system.

These are electronically balanced outputs with a rated level / impedance of + 4dB / 600Ω. Each group output connector is connected another 2 jacks in parallel as follows.

(GROUP1‖GROUP9‖GROUP17, GROUP2‖GROUP10‖GROUP18,

GROUP3‖GROUP11‖GROUP19, GROUP4‖GROUP12‖GROUP20,

GROUP5‖GROUP13‖GROUP21, GROUP6‖GROUP14‖GROUP22,

GROUP7‖GROUP15‖GROUP23, GROUP8‖GROUP16‖GROUP24)

5. 8 GROUP OUTPUT & MIX OUT,MONO OUT INSTER

These 1/4″TRS connectors provide an unbalanced insert patch point before the GROUP MASTER FADER.

The INSTER-IN line accepts a 0dB/600Ω signal and the INSTER -OUT line delivers a 0dB signal capable of driving a 10k-ohm load impedance.

The GROUP INSTER inputs are convenient way of patching in a device such as a compressor/limiter for use on an entire group of instruments.

6. CTRL ROOM CONNECTOR

These are unbalanced 1/4″phone jack with a nominal output and impedance of +4dB/600Ω.

This is where you connect your control room monitor amplifier inputs.

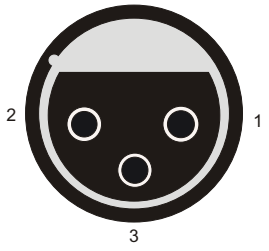
7. STUDIO OUT CONNECTOR

These unbalanced 1/4″phone jack with a nominal output and impedance of +4dB/600Ω.

This is where you connect your studio monitor amplifier inputs.

8. MIX-B OUT CONNECTOR

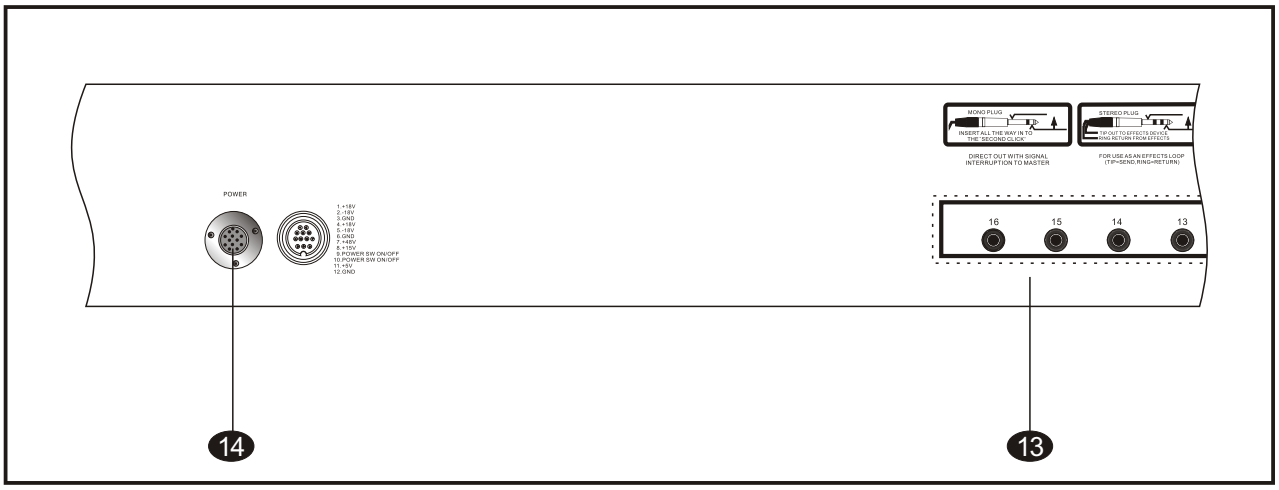
The MIX-B jack are 1/4″TRS unbalanced, with tip high , and ring and sleeve tied together as ground, nominal level +4dB/600Ω.These jacks make the MIX-B signal available for external patching.



PHASE(Normal)
1.GND
2.(+)
3.(-)

PHASE(Reverse)
1.GND
2.(-)
3.(+)

Group Out Jack Pin



9. 2-TRACK IN CONNECTOR

The 2- TRACK IN jack are 1/4 ″TRS unbalanced , with tip high and ring and sleeve tied together to ground. Usually, you will have the 2TRACK INPUT connected to the output of your 2-Track master record.

10. EXTERNAL INPUT CONNECTOR

The EXTERNAL INPUT jacks are 1/4″TRS unbalanced , with tip high, and ring and sleeve tied together to ground . These inputs offer you the ability to listen to two mono or stereo sources directly without patching through input channels.

11. MIX OUT CONNECTOR

These connectors transmit the MIX L/R outputs to the power amplifiers and/or the processing gear.
These XLR type outputs have a rated level of +4dB and impedance of 600 ohms.

12. MONO OUTPUT CONNECTOR

These XLR type outputs have a rated level of +4dB and impedance of 600 ohms.
The MONO OUT can be used for simple recording of a live performance, for driving a sub power amplifier , or to check for phase cancellation.

13. TAPE RETURN INPUT CONNECTOR

The connections to and from your multi-track recorder are on the rear panel of the 8 Bus series.
There are 24, 32 Tape Return jacks and 24 Sub-master. The Tape Return jacks are 1/4″ TRS balanced, with tip wired to high (+),ring to low(-)and sleeve to ground.

14. DC POWER INPUT CONNECTOR

Your 8 Bus console should ONLY be powered by the appreciate 8 Bus Power supply.

General Wiring Procedures

To take full advantage of the excellent signal to noise ratio and low distortion of consoles care must be taken to ensure that incorrect installation and wiring does not degrade the performance of the desk. Hum, buzz , instability and Radio Frequency interference can usually be traced to earth loops and inferior earthing systems. In some areas, especially heavily industrial areas, the incoming mains earth will not be adequate and a separate technical earth for all the audio equipment must be s upplied. However , check with your local electricity supply c ompany to ensure that safety regulations are not infringed or negated.
The successful, hum free, installation of a system requires forethought ,and the establishment of a set of ground rules , which must be consistently adhered to at all stages of installation.

Initial Wiring Considerations

- For optimum performance,it is essential for the earthing system to be clean and noise free,as all signal are referenced to this earth. A central point should be decided on for the main earth point system, and all earths should be 'star fed' from this point. It is common electrical practice to ' daisy chain ' the earths to all electrical outlets but this method is unsuitable for audio installations. The preferred method is to run an individual earth wire from each outlet, back to the system star point to provide a safety earth screen reference for each of equipment.
A separate earth wire should also be run from each equipment rack and area to the star point . This may or may not be used depending on circumstances, but it is easier to install in the first place, than later when problems arise.
The location of the star point should be convenient, easily accessible place preferably at the chassis of the console, or in the main equipment rack.

- Install separate 'clean' and 'dirty' mains outlets, wired individually back to the incoming mains distribution box. Use the 'clean' supply for all audio equipment and the 'dirty' supply for all lighting, vending machines etc. Never mix the two systems.

- If necessary, to provide sufficient isolation from mains borne interference, install an isolating transformer.
This should be provided with a Faraday Shield which must be connected with earth.

- Never locate the incoming mains distribution box near audio equipment, especially tape recorders , which are very sensitive to elector-magnetic fields.

- Ensure that all equipment racks are connected to earth, via a separate wire back to the star point.

- Equipment which has unbalanced inputs and outputs may need to be isolated from the rack to prevent earth loops.

Audio Wiring

Noise immunity is improved significantly by the use of low impedance sources, such as good quality professional microphones or the outputs from most modern audio equipment . Audio cheaper high impedance microphones, which may suffer from interference over long cables runs, even with well-made cables.
Having provided all equipment with power and earthing connections consideration must be given to the method of providing audio interconnection and adequate screening of those interconnections. This must be done in a logical sequence to avoid problems and assist in the localization of problem equipment.
- Connect the control room monitor system to the console outputs and check for any hum, buzzr RFI. Only when you are satisfied with quietness of the console and the monitor system should you proceed with the next step.

- Connect the multi track tape recorder, via the noise reduction system, if in use , and again check that the system is clean.

- Connect stereo tape records , studio monitors aux sends one at a time , checking and isolating any connection which degrades performance.

- Connect all other peripheral devices.

- Connect all microphone lines.

By following this sequence much time and future trouble will be saved, and the result will be a quiet, stable system.

Shielding

Audio equipment is supplied with a variety of input and output configuration, which must be taken into consideration when deciding where the screen connections should be made. there are three sources of unwanted signal being impressed on the screen, which are as follows;
- Extraneous electrostatic or electromagnetic fields.

- Noise and interference on the earth line.

- Capacitive coupling between the screen and signal wires.

To minimize the adverse affects of the unwanted coupling to the signal wires, it is important that the screen is connected at one end only , i.e. the screen must not carry signal current . Any signal on the wires within the signal, either directly , if the screen is connected at signal source end, or indirectly via the earthing system, if the signal is connected at the signal destination end. The indirect connection will cause an increase in high frequency cross-talk and should be avoided wherever possible.

Therefore, in general always connect the shield only at the signal source end .In high RF areas ,the screen can also be connected to earth via a 0.01μF capacitor. This will present a short circuit at RF frequencies, thus lowering effective shield impedance to ground .However, at low audio frequencies the reactance of the capacitor will be sufficiently high not to cause an earth loop problem.

Points to Remember

- In all cases, use good quality twin screened audio cable .Check for instability at the output.

- Always connect both conductors at both ends, and ensure that the screen is only connected at once end.

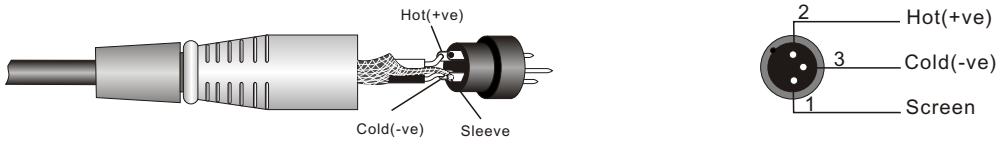
- Do not disconnect the mains earth from each piece of equipment. This is needed to provided both safety and screen returns to the system star point.

- Equipment which has balanced inputs and outputs may need to be electrically isolated from the equipment rack and/ or other equipment , to avoid earth loops.

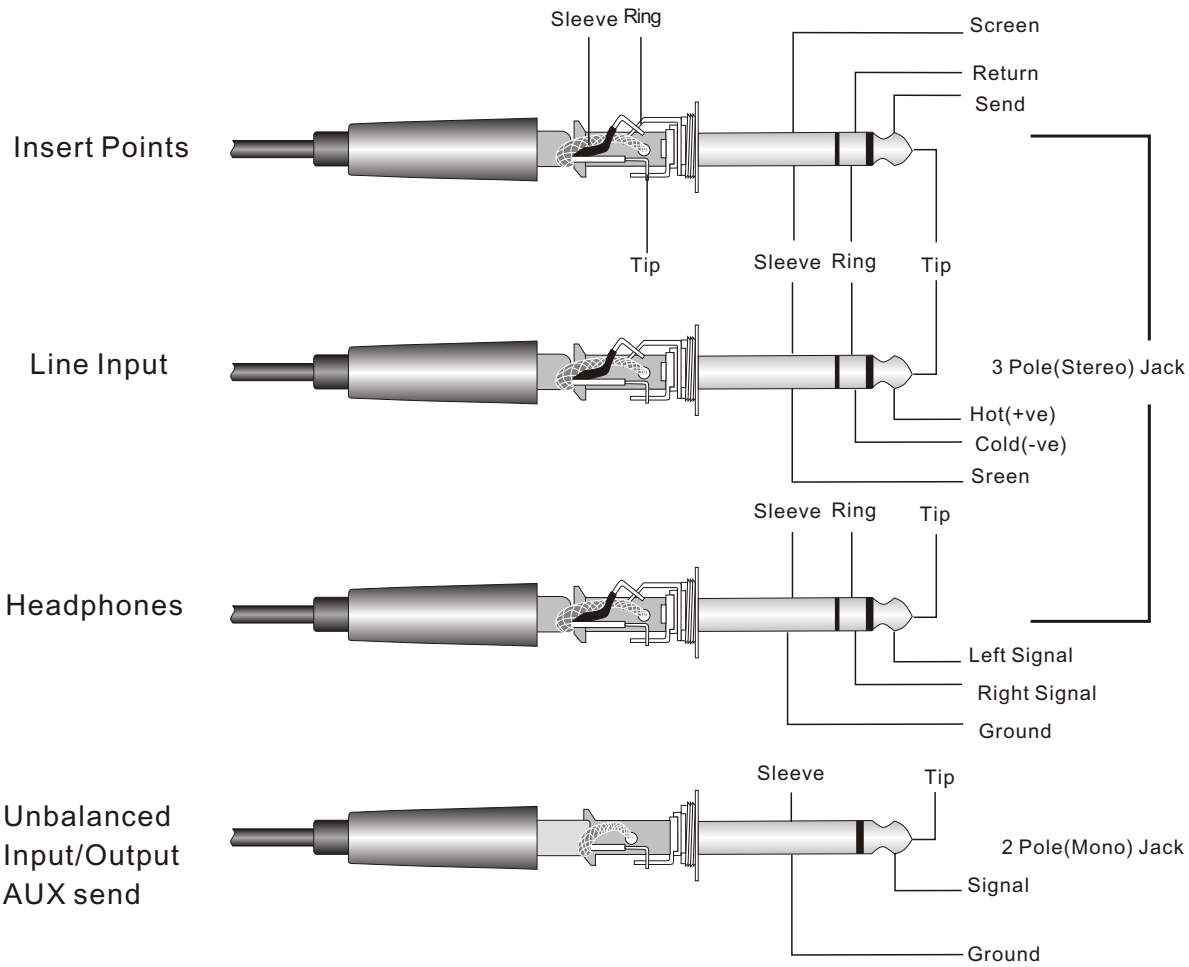
It is important to remember that all equipment which is connected to the mains it a potential source of hum and interference and may radiate both electrostatic or electromagnetic radiation .In addition ,the mains will also act as a carrier for many forms of RF interference generated by electric motors, air-conditioning units, thyristor light dimmers etc.
Unless the earth system is clean all attempts to improve hum noise levels will be futile. In extreme cases there will be no alternative but to provide a completely separate and independent ‘technical earth’ to replace the incoming ‘noisy earth’.
However, always consult your local electricity supply authority to ensure that safety regulations are not being infringed.

Audio Connectors

Two different types of audio connectors are used, 3-pin XLR and 1/4″there pole('A' gauge)jacks. These are used in several configurations as shown below.



Balanced Input

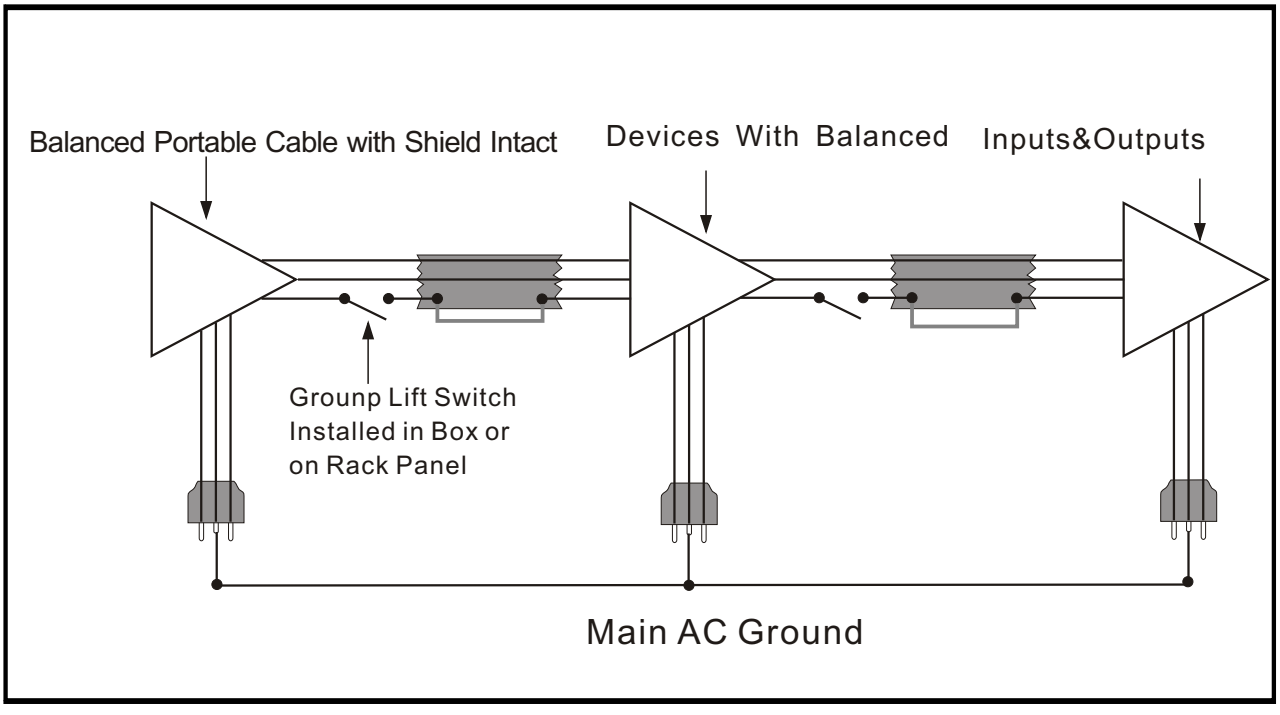


Grounding on the Road

Many of the above procedures are difficult to use on the road .For example , the telescoping shield concept is nearly impossible to use on a portable cable. Similarly , it is a difficult and time consuming process to search for a water pipe ground every time the system is moved from one performance to another . Yet portable systems can be extremely complex, and may have major grounding problems. The telescoping shield concept can be extended to portable systems by installing a “ground lift switch” on the output of each device, and on the inputs of devices after the mixer. Since microphones are not grounded except through the mixer, there is on need for an input ground lift switch on most mixers. The diagram below shows a typical ground lift switch installation . By judicious use of these switches , each piece of equipment can be AC grounded for safety without causing ground loops.

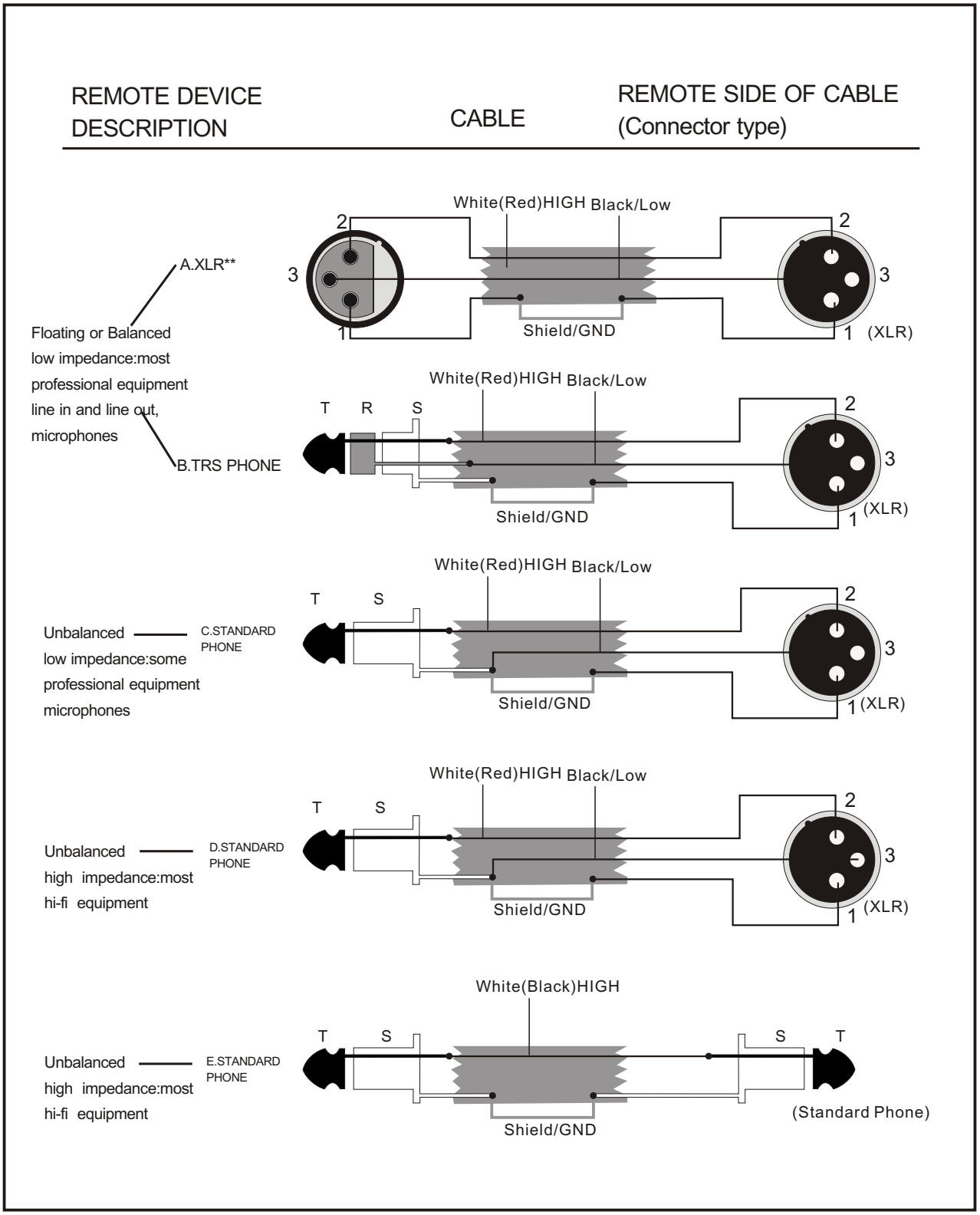
Because of leakage currents from equipment in the audio system , and in the house, some noise currents can ride on the AC ground wire and are able to enter the audio system. This problem is usually most noticeable with sensitive equipment such as the mixer.Lifting the AC ground at the mixer can often solve this problem.However , lifting the AC ground on the mixer also lifts the AC ground on the microphone chassis , causing a safety hazard . Try connecting the mixer and any other sensitive equipment to other AC circuits.The only other apparent solution to this problem is to eliminate the noise on the AC ground, which is not an easy task.Since it has its own ground, a portable AC power distribution system connected to the house service entrance may be the most effective way to avoid all AC noises. Such a system can be designed and constructed by a qualified electrician ; check local electrical codes before each use.

USE OF GROUND LIFT SWITCH



Perhaps the best answer to portable system grounding problems, PFL,EMI, and AC noise ,is to develop a versatile grounding scheme.Ground lift switches and adapters,and a portable AC power distribution system allow different grounding techniques to be tried easily and quickly when a problem occurs.

CONNECTOR AND CABLE CONFIGURATIONS



Connector and cable configurations recommended for use with the 8 Bus series.
These cables are bsed on the use of auxiliary equipment that is isolated from the AC power mains .

Applications Examples

1. PA and Sound Reinforcement

From a features standpoint , 8 Bus Series consoles are easy to configure for public address and sound reinforcement applications, whether you are mixing the house,stage monitors or both at once.Use the L/R main mix buses and your main L/R outputs as your main signal path.

If you want a headphone cue mix , either patch the Control Room outputs to a suitable headphone amplifier or select MONITOR as the source for phones.

This will allow you to listen to any source you can select for the CONTROL ROOM.

You can also use the solo buses as headphone cue. If you prefer , you can modify the solo circuits for PFL (pre-fader listen).

You should normally use the L/R mix buses as your Main or House feed.Patch out from the L/R outputs into the input to your amp stack(usually your house graphic equalizer).Any of the AUX buses can be used to feed a stage monitor mix.

Set the AUX sends in each channel to PRE and patch the AUX send outputs to the appropriate amplifiers.

If you need to provide a simultaneous mix for a stereo recording, use the MIX-B buses.

- **FOLLOW THIS SENSITIVITY ADJUSTMENT PROCEDURE FOR EACH CHANNEL IN USE**

1) Assign signal to channel fader:

LIf channel will be used with a microphone, MIC/LINE switch should be up &MIC/LINE,TAPE switch should be up.

LIf channel will be used with line input, MIC/LINE switch should be down & MIC/LINE,TAPE switch should be up.

2) Set channel strip controls as follows.

LTRIM pot all the way counterclockwise.

LAUX SEND controls all the way counterclockwise.

LLOW-CUT switch either on or off(on recommended for MIC inputs)

LChannel fader at UNITY

LPAN pot hard left or right

LSOLO switch on (for monitoring)

3) the channel's-10dB Led should light. The L/R main meters will show the actual internal operating level . Now you will optimize levels.

4) Adjust the TRIM control clockwise to get peaks that regularly hit 0dB on the L/R meters.

5) If you use EQ, adjust the TRIM control after EQ controls set up.

6) Repeat steps 1-4 on the next channel that is being used.

2. Recording System

The recording process can be as simple as one microphone recorded on a monaural tape record.
As in the PA sound reinforcement system shown previously , balanced microphones are plugged directly into the channel XLR input connectors, while unbalanced electronic instrument outputs (synthesizers,etc.) are connected via a balancing transformer type direct box. Compressors are connected at the insert jacks of the vocal MIC channels, the AUX SENDS and RETURN connected to a high-quality stereo plate reverb unit. The PHONES OUT connectors feed separate headphone amplifiers providing two difference headphone cue mixes for the performers.The CONTROL ROOM OUT and STUDIO OUT connectors feed the monitor system, and the GROUP OUT &TAPE IN connectors feed the 4-channel multi-track recorder

.

- FOLLOW THIS SENSITIVITY ADJUSTMENT PROCEDURE FOR EACH CHANNEL IN USE

1)Assign signal to channel fader:
LIf channel will be used with a microphone,MIC/LINE switch should be up &MIX/LINE,TAPE switch should be up.
LIf channel will be used with line input, MIC/LINE switch should be down &MIC/LINE, TAPE switch should be up.
LIf channel will be used with a tape input, MIC/LINE or TAPE switch should be down.

2)set channel strip controls as follows:
LTRIM pot all the way counterclockwise
LAUX SEND controls all the way counterclockwise
LLOW-CUT switch either on or off (on recommended for MIC inputs)
LChannel fader at UNITY
LPAN pot hard left or right
LSOLO switch on (for monitoring)

3)If the channel is being used for a tape input during mix-down , roll and already-recorded track from your recorder

4)The channel's -10 dB led should light. The L/R main meters will show the actual internal operating level. Now you will optimize levels.

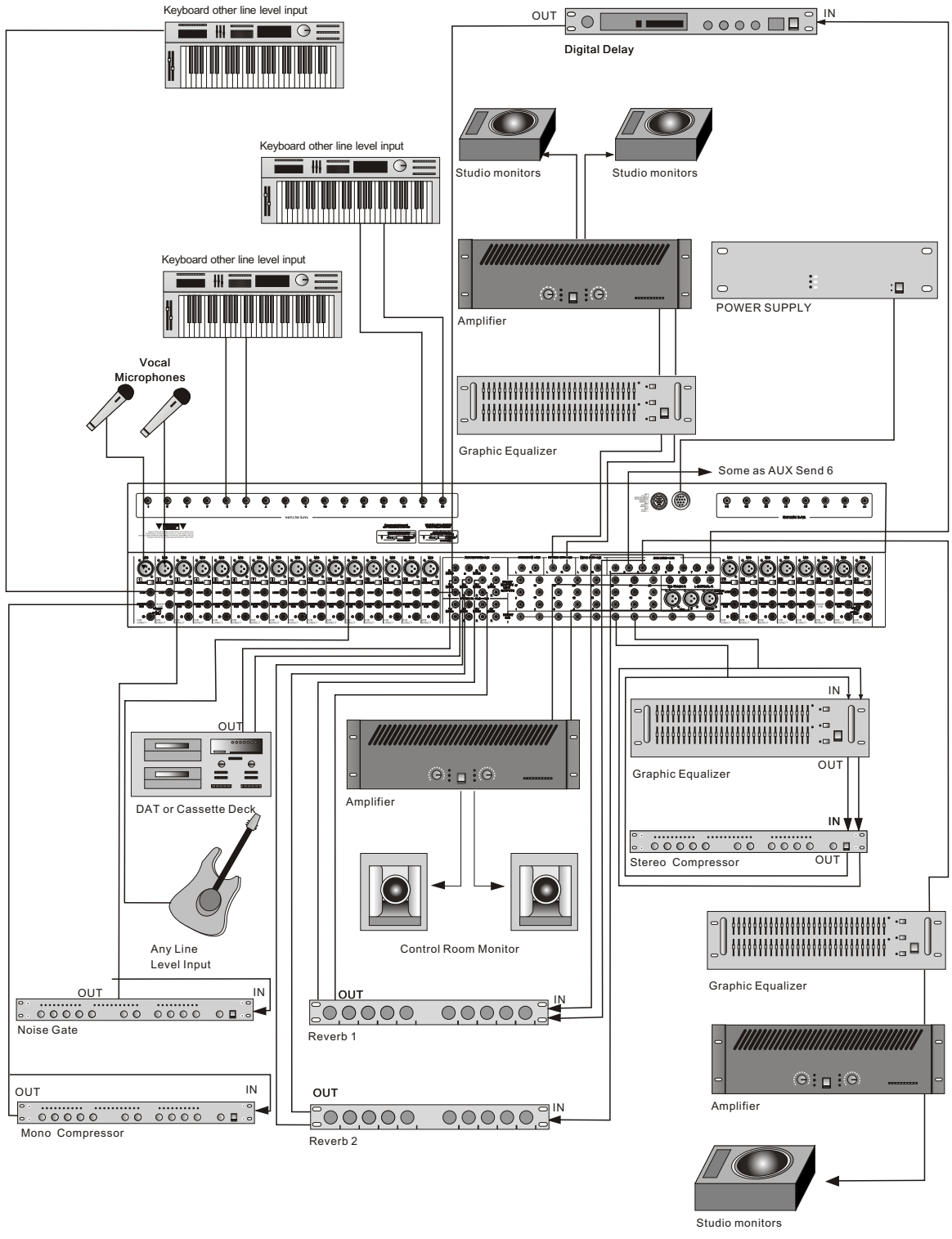
5)Adjust the TRIM control clockwise to get peaks that regularly hit 0dB on the L/R meters.

6)If you use EQ, adjust the TRIM control after EQ controls set up.

7)Repeat steps 1-5 on the next channel that is being used.

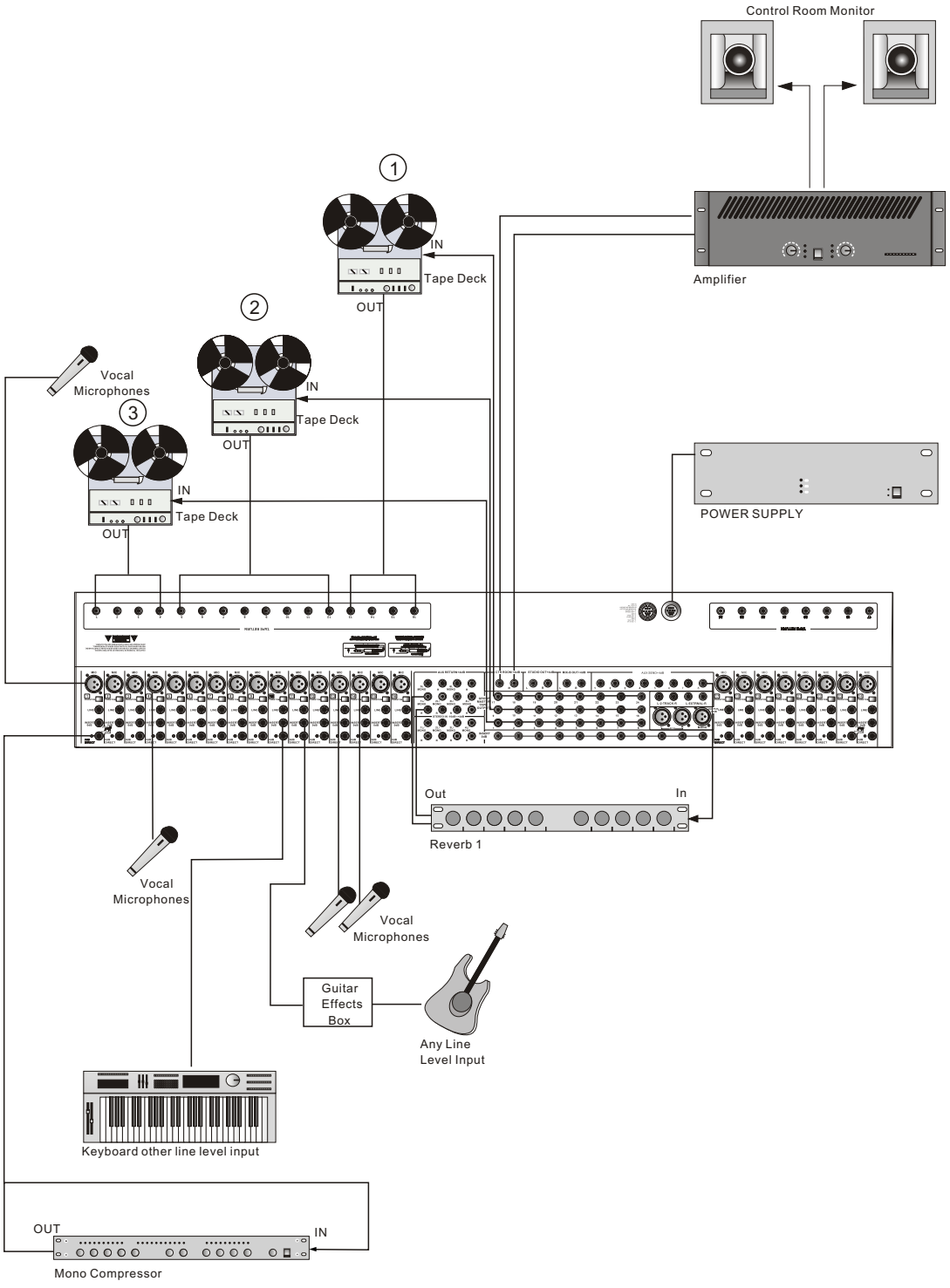
Applications-1

PA&SOUND REINFORCEMENT CONNCTION

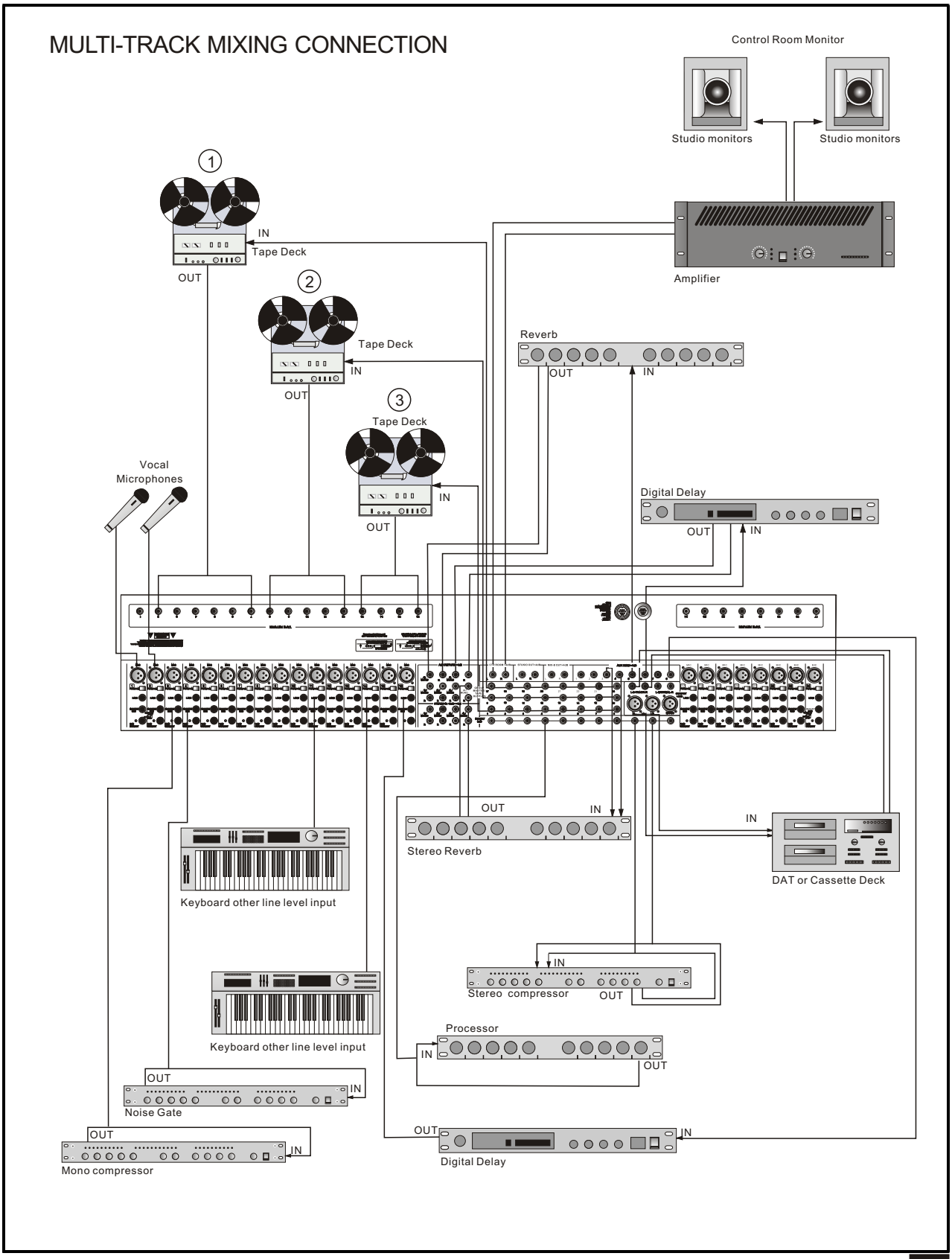


Applications-2

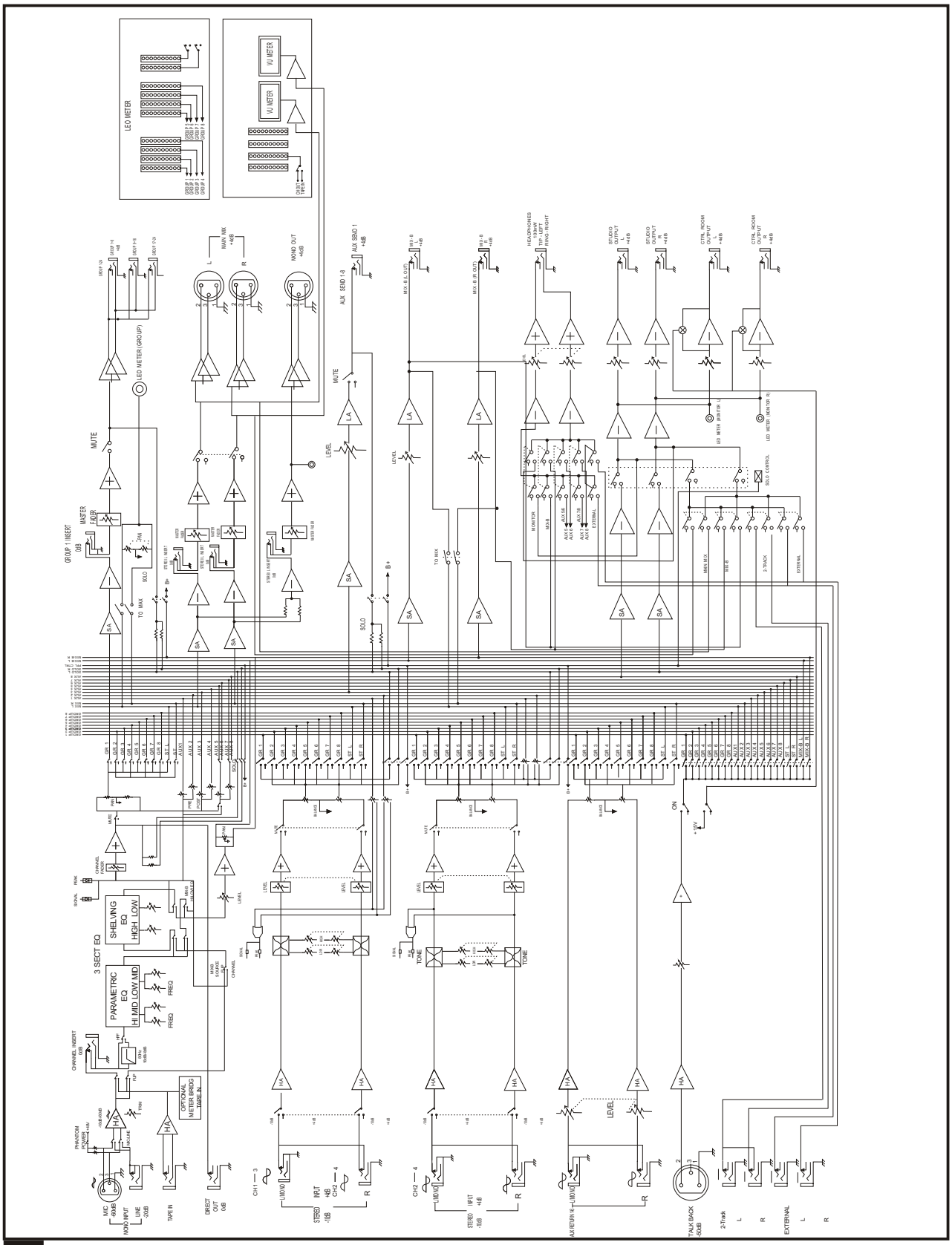
OVER DUBBING CONNECTION



Applications-3



Block Diagram



Specifications

*0dB=0.775Vrms,0dbV=1Vrms

-GENERAL

Maximum Output Level (0.5% THD at 1kHz)	+24dB(MIX L/R,GROUP OUT,MONO OUT)@600Ω +20dB(DIRECT OUT,AUX SEND 1-8)@600Ω +20dB(INSERT)@10kΩ +20dB(CTRL ROOM,STUDIO OUT)@600Ω More than 100mW(HEADPHONES)@40Ω
Output Level	0dB(@10kΩ):INSERT 0dB(@600Ω):DIRECT OUT
T.H.D	<0.1%+14dB 20Hz~20kHz (MIX L/R,GROUP 1-8,MONO OUT,AUX SEND 1~8,CTRL ROOM,STUDIO OUT)@600Ω
Frequency Response	20Hz~20kHz,+1dB/-2dB (MIX L/R,GROUP 1-8,MONO OUT,AUX SEND 1~8,CTRL ROOM,STUDIO OUT)@600Ω
Hum and Noise (Average,Rs=150Ω)	-129dB equivalent input noise -95dB residual noise (MIX L/R,GROUP 1~8,MONO OUT ,CTRL ROOM OUT,STUDIO OUT) -88dB(MIX L/R,GROUP 1~8,MONO OUT,CTRL ROOM OUT,STUDIO OUT) *Master fader at nominal level and all channel assign switch OFF
Maximum Voltage Gain	84dB MIC IN to MIX L/R,GROUP OUT 1~8 76dB MIC IN to AUX SEND 1-4,AUX SEND 5-8(PRE) 86dB MIC IN to AUX SEND 5-8(POST) 90dB MIC IN to STUDIO OUT,CTRL ROOM OUT 84dB MIC IN to MONO OUT 44dB LINE IN to MIX L/R,GROUP OUT 1-8 36dB LINE IN to AUX SEND 1-4, AUX SEND 5-8(PRE) 46dB LINE IN to AUX SEND 5-8(POST) 50dB LINE IN toSTUDIO OUT, CTRL ROOM OUT 44dB LINE IN to MONO OUT 34dB ST IN to MIX L/R, GROUP OUT 1-8 26dB ST 1,3 IN to AUX 1,2 36dB ST 2,4 IN to AUX 3,4 34dB ST IN to MONO OUT 6dB EXTERNAL IN to CTRL ROOM OUT 24dB 2-TRACK IN to CTRL ROOM OUT 70dB TALK BACK to MIX L/R, GROUP OUT 1-8 66dB TALK BACK to AUX 1-8 16dB AUX RETURN to MIX L/R,GROUP OUT 1-8 23.8dB TAPE RETURN to MIX-B L/R
Crosstalk(at 1kHz)	-70dB between input channels -70dB between output channels
Gain Control (Input Channel) Input Channel Equalization	44dB Variable (-60dB~-16dB) ±15dB Maximum Boost or Cut HIGH:12kHz peaking(Variable) MID-HI:800Hz~8kHz peaking(Variable) MID-LOW:160Hz~1.6kHz peaking(Variable) LOW:80Hz shelving * Turnover/roll off frequencies:located3dB below maximum boost/cut
LED Meters	10 Segment LED GROUP 1~8,MIX L/R or MONITOR L/R,CHANNEL INPUT Analog type VU meter MIX OUT L/R
Mono Control(Input CHANNEL) Input Channel Equalization	Peak:An indicator for each channel turns on when the pre-channel fader signal is 3dB below clipping. Signal:An indicator for each channel turns on when the pre-channel fader signal is -10dB below.
Phantom Power	+48V,DC
Power Source	External Power Supply
Weight	32 CH:41.5Kg; 40 CH:54Kg
Dimensions	32 CH : 1210(W)×675(D)×170(H)mm 40 CH : 1400(W)×675(D)×170(H)mm

- INPUT

Intput Connector	Input Impedance	Nominal Impedance	Input Nominal Level	Connector Type
CH Mic	4kΩ	50~600Ω	-60dB	XLR 3-31 Type Balanced
CH Line	10kΩ	600Ω	-20dB	Phone Jack(TRS) T=HOT R=COLD S=GND
Stereo Input	5kΩ	600Ω	-10dB	Unbalanced Phone Jack
2-Track External Input	10kΩ	600Ω	-10dBV +4dB	Unbalanced Phone Jack
AUX Return	10kΩ	600Ω	0dB	Unbalanced Phone Jack
Channel Insert In	10kΩ	600Ω	+4dB	Phone Jack(TRS) T=HOT R=COLD S=GND
Tape In	10kΩ	600Ω	-10dB	Balanced Phone Jack
Group Out Insert In	10kΩ	600Ω	0dB	Phone Jack(TRS) T=HOT R=COLD S=GND
Talk Back	10kΩ	600Ω	-50dB	Unbalanced XLR Jack

- OUTPUT

Output Connector	Output Impedance	Nominal Impedance	Input Nominal Level	Connector Type
MIX Out L/R	150Ω	600Ω	+4dB	XLR 3-32 Type
Group Out 1-8	150Ω	600Ω	+4dB	Unbalanced Phone Jack
CTRL Room Out	75Ω	600Ω	+4dB	Unbalanced Phone Jack
Studio Out	75Ω	600Ω	+4dB	Unbalanced Phone Jack
AUX Send 1-8	75Ω	600Ω	+4dB	Unbalanced Phone Jack
Mono Out	150Ω		+4dB	Balanced XLR 3-32 Type
Output Connector	600Ω	10Ω	0dB	Phone Jack(TRS) T=HOT R=COLD S=GND
Output Connector	600Ω	10Ω	0dB	Phone Jack(TRS) T=HOT R=COLD S=GND
Direct Out	600Ω	10Ω	0dB	Unbalanced Phone Jack
Phones Out	100Ω	40Ω	3mW	Stereo Phone Jack

* Specifications and design subject to change with notice for improvements.

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